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California in the World Economy: Current Position, Long-Term Scenarios and Policy Making Challenges

Authors
Hinojosa, Raul
De Paolis, Fernando

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CALIFORNIA IN THE WORLD ECONOMY: CURRENT POSITION, LONG-TERM SCENARIOS AND POLICY MAKING CHALLENGES

Raul Hinojosa, Assistant Professor, UCLA School of Public Policy and Social Research and Founding Research Director of the NAID Center at UCLA *with* Fernando De Paolis, Assistant Researcher, NAID Center at UCLA

"It is just not credible that the United States can remain an oasis of prosperity unaffected by a world that is experiencing greatly increased stress."
Federal Reserve Chair Alan Greenspan, 1998

I. Introduction

As we enter into the 21st century, the world economy is encountering a dual challenge on a scale unprecedented in the history of the planet. On the one hand, the world economy will undergo a massive demographic shift whereby 99% of all new entrants into the world's labor markets over the next 25 years will come from today's low and moderate income countries.[1] Accompanying this demographic growth will be large scale migrations from rural to urban employment and an unprecedented challenge of mobilizing educational and health investments that will be crucial in determining the pattern of inequality of skills, productivity, consumption, and environmental sustainability of the world's new economy. On the other hand, the world economy has been rapidly surpassing previous historical records of trade, capital and migration flows relative to global production not seen since the outbreak of World War I[2]. As in the 19th century, many have attributed these surging flows to technological change (in communications, transportation and production), which has facilitated the shifting of economic activities across developed economies and, increasingly, towards developing regions. Together, these two trends can be shown to generate a pattern of increasing income inequality within all major regions of the world economy.[3]

Meanwhile, California is facing a dual challenge of its own, which in many ways is linked to the current global transformations. The region is currently at the forefront of the major global and domestic challenges that the United States as a whole will have to face as we enter in the twenty-first century. On the one hand, the one trillion dollar California economy is playing a central and vibrant role in the emerging Pacific and global economy. The region is the nation's top exporter and importer with a significantly larger share of trade relative to overall economic activity as the country as a whole, containing the busiest and most elaborate system of sea and air ports in the world, as well as serving as a cutting edge of the global information and entertainment technology revolution. California has become the prime recipient of more direct foreign investments from more countries than any other state and its pensions and other savings

[1] World Bank, World Development Report, 1995.
[2] Maddison, 1991
[3] Hinojosa, McCleery and de Paolis, 1998.

serve as a major global investor. California is now the first immigration region in the country, with more languages spoken here than anywhere else in the world, sharing with Mexico the world's most extensive pattern of labor market interdependence between a developed and developing country.[4] California also has a production and employment structure that can potentially both benefit greatly as well as be highly vulnerable to increasing flows of trade, capital and migration flows: more jobs are both supported (as well as threatened) by this vast network of trade and investment flows than anywhere else in the nation. The recent financial market crisis in Asia caught most Californians by surprise, even though it will affect pensioners, banks, farmers, manufacturers, suppliers, and providers of infrastructure and services throughout the region. Yet while the state of California can be ranked as 7th largest economy and 9th largest global trader, the region has a dangerously underdeveloped capacity to track and forecast its position in a world economy and society that is projected to be radically transformed even within the next two decades.

On the other hand, California is also the prime living laboratory for the rapidly accelerating ethno-racial demographic transformations of the national, if not global society. The white European origin population already constitutes less than half of the region's population. The region is destined to operate in the first quarter of the next century with no ethno-racial political majority, but rather within multiple ethno-racial pluralities consisting of Latinos, African-Americans, Asian-Americans, whites, and other immigrants and their offspring from all over the world. In sum, California is well on its way to becoming first highly advanced capitalist multicultural society within a rapidly integrating world economy and world society. Yet most of the institutional mechanisms for political consensus building were established for a very different domestic economy and a very different ethno-racially homogeneous society, such that many issues dealing with long-term income inequality and public investments in education, health and economic adjustment are being made much more difficult. It is this inability of political institutions to make long-term adjustments towards a economically competitive and socially equitable insertion into the new global economy which threatens to reduces the relevance and sovereignty of the role of the state.

As we approach this unprecedented set of global and regional challenges, we find ourselves unprepared adequately to conceptualize and track the complex relationship between global and regional transformations. We lack the ability to establish the institutional capacity for developing appropriate policy strategies, not only on a regional level, but on a national, trans-national and global level. This chapter seeks to develop a framework for the critical analysis and tracking of regional dynamics within a context of accelerated structural change and global linkages. On this basis it offers some suggestions for avenues for rethinking and developing institutional capacities for regional development from a transnationally and globally informed strategic perspective.

In particular, we critique the current emphasis in "globalization" policy debates on whether or not to further liberalize trade, capital and migration flows as the major issue which will define the future patterns of the global and regional economy. The impacts of trade, capital and migration flows and their liberalization are often highly exaggerated as contributors to

[4] Bustamante, Reynolds and Hinojosa, 1992.

regional uneven development compared to other technological and social regionally specific dynamics. Furthermore, the pattern of linkages themselves can be shown to be less important than the nature of the socio-economic development dynamics within the other regions with which we are linked. From this perspective, it is much more important is to understand global trends and regional trends and to trace the nature of particular linkages which tie socio-economic dynamics of California with socio-economic dynamics in other regions. The key question is thus how specific regional and global trends inter-relate in complementary and/or contradictory divisions of activities, be it production, consumption, investment, capital flows and labor market interdependencies.

Within this optic, how globalization evolves and affects particular regions is less of an issue of the technological and even policy change reigning the ease of movement (transportation costs, electronic facilitation of finance and information) or even the changes in trade and investment policies (GATT, NAFTA, MIA which lower tariffs and investment barriers). Rather what is much more important is the remaking of regional political capacity to predict, influence, prosper, and positively adjust economically and socially within the context of the long-term development dynamics of the various parts of the world with which we are most interconnected.

In order to operationalize this framework of analysis, we present a methodological approach for empirically tracking how the dynamics of California's economy is related to other regional dynamics throughout the world though networks of trade, capital and labor flows. The model can be operationalized for a variety of sub-state regions of California. Here we will focus on the impact on Southern California. We present a framework consisting of an empirically based multi-regional computable general equilibrium (CGE) model of the world, complemented with empirical time series and sectoral trans-regional case studies. The Cal-Global CGE model consists of 11 global regions, 11 sectors, and 4 income groups all linked by trade, capital and migration flows within a 25 year dynamic framework for projecting alternative policy and structural development scenarios.

This framework allows us to not only track the magnitude of trade, capital and labor flows, but also the socio-economic structures both within California and within the multiple regions around the world that together sustain these flows. Within this framework, we can analyze the particularly unique patterns of "triangularization" between California and other regions which are linked through a variety of complex network of flows (i.e., the dynamics of how Asian direct foreign investment meets Latino immigrant labor and local design capacity in the LA garment industry). Thus we can understand how California, for example, becomes a site where the Asian financial crisis interacts with the Mexican rural to urban transition within the socio-economic context of California.[5]

[5] See Hinojosa (1998) for a review of alternative scenarios of policy options within the current context of Southern California's linkage with different regions around the world, including: (1) the impact of implementing or rejecting NAFTA on Southern California and other regional trading partners, including impacts on migration and trade diversion patterns; (2) the impact of implementing Proposition 187 or alternatives approaches to a North American immigration policy, including open migration with enhanced labor rights; and (3) alternative scenarios of the Asia Crisis, including different patterns of renewed capital flows as well as trade and financial restructuring.

We can also use this same empirically based model to simulate the impact on California of alternative scenarios of policy strategies and long-term structural relations with different regions around the world. Three types of alternative scenarios are analyzed in this paper:

1. -Current base line projections of the future of income inequality in all major regions given the relatively low level of education expenditures around the world.
2. -The impact on global production, consumption and trade of increased education and training investments that would be required to close income gaps in all regions around the world.
3. -The relative impact of global trade liberalization, increased capital flows and R&D investments in closing or widening income gaps between and within regions.

We conclude with some suggestions for avenues for rethinking and developing institutional capacities for regional development within a transnationally and globally informed strategic perspective. Emphasis is placed on developing regional multi-cultural consensus building capacity. This is necessary for two major reasons: (a) mobilizing resources for long-term investments that will be required to make the region cohesive and competitively: educational, infrastructure and economic adjustment/retraining/development; and (b) the mobilization of the regions multicultural population is needed as a resource base to reach out to multiple regions around the world for complementary linkages and collaborative partnerships.

II. A Tracking and Modeling Framework for Globalization and Regional Development

This paper is part of a broader effort at the UCLA NAID Center to construct a database for tracking, comparing and modeling California's position in the evolving global economy. The goal of this effort is to collect global comparative data for variables that will be necessary for building a dynamic modeling framework for analyzing the impact of alternative scenarios on production, real wages, the structure of employment, and wage income inequality within and between countries.[6] The "Cal-Global CGE model" presented here was designed to simulate various policy measures, exogenous shocks, and economic interactions among eleven "country clusters" or key regions of the world, including separate California and Southern California sub-national regions.

Of particular interest will be the impact on employment and income distribution among skilled and unskilled workers due to enhanced trade and investment competition between California and Latin America, OECD, former Soviet Bloc, Asia, and other low and middle income regions. The CGE model simulates the dynamic evolution of patterns of trade, total output, factor mobility, and income distribution in each cluster of countries for each production factor. In addition, the model generates dynamic pathways of the behavior of the global system over a 25 year time framework (1995-2020), under alternative assumptions regarding macroeconomic variables, policy decision on education, research and development (R&D), and trade policies. We pay particular attention to both growth and inequality implications of all scenarios, searching for ways to improve growth without worsening income inequality, and to

[6] See Hinojosa, McCleery and de Paolis (1998) for more detail on the NAID-Global dynamic computable general equilibrium (CGE) modeling project.

explore if increased growth with improved income distribution is possible on a global scale. California's relative position in the world economy and its particular labor market and human capital prospects compared to the rest of the OECD will of course be fundamental in determining the local impact of alternative global scenarios of growth and inequality.

III. Data Base of California's Position in a Changing World Economy

The construction of the database used in the Cal-Global CGE model represents a major collection and aggregation undertaking. Tables 1 to 7 present a summary of some of the components for the base data, presenting key economic indicators which reveal important issues concerning the relative position of California in comparison to other world regions.

Table 1 presents the data components of the model which includes 11 "country clusters" or regional aggregations, 11 sectors of production, 6 factors, 2 types of labor mobility, and 3 institutions for the distribution of factor income. Chart 1 shows, California sits at the top end of a highly skewed income distribution in a rapidly integrating world economy. Yet given the intense discussion about globalization that has preoccupied the United States in recent years, it is interesting to note that the U.S. is actually among the least open economies in terms of trade to GNP, compared to both high income as well as low income countries. Among the rich OECD countries, all countries except Japan are at least twice if not three times more trade dependent. Even compared to the vast majority of developing countries, the U.S. is comparatively much less open.

While the dismal statistical accounting of sub-national trade data in the United States makes it impossible to provide a firm estimate of state and regional level imports and exports, available data can be used to provide ranges of probable estimates for the California and Southern California economies. All available information indicates that both California and Southern California are moderately more open to trade than is the U.S. as a whole.

The most comparable data is for the exports of goods (not including services) as a share of Gross Domestic or State Product where California is more than 20% more open than the US as a whole (1996 U.S. exports as share of GDP was 7.9% while California exports as a share of GSP was 10.2%). While already impressive, this figure is most likely based on an under-estimation of relative total California exports.[7] Even more impressive and more reliable, however, is California's rate of growth of exports relative to the U.S. Chart 2 shows the changing rates of export to gross product for the U.S., California as well as Southern California. While the Southern California data is also probably an underestimation,[8] it is interesting to note that it has not been growing as fast as either California or the U.S. And while California may be relatively more export oriented than the U.S. as a whole, California is significantly less open to foreign trade compared to most of the 30 largest countries in the world.

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[7] The California estimate is most likely an under-estimate since it is based on the Origin of Movement Series of the U.S. Department of Commerce, International Trade Administration. The total OMS goods exports for the U.S. is almost 20% below the official U.S. International Accounts data. See Table 3.

[8] Data for the sub-state level is from the Export Locator Series of the U.S. Department of Commerce, International Trade Administration whose total U.S. figure also sums to about 20% less than other official sources.

Although by no means exhaustive, this brief discussion is meant to reiterate that if we are to accurately track and project the impact of trade on the state's, the California region will have to commit to a much more systematic effort to provide regular estimates from existing and new data. Give the state's trillion dollar economy, the world would also benefit from such a California effort.

Table 2 presents general economic indicators in the base year (1992) data, revealing more crucial relative variables used in the model for projecting the future position of Southern California in comparison to other world regions. California, Southern California and LA County are above OECD and global averages in per-capita income and R&D expenditures. Southern California, however, is actually below average in educational expenditures compared to the rest of the high income OECD and not much different from many moderate income countries. This will have important implication for the possible future global growth and competitive prospects for the region. Table 3 shows more detail on relative global education structures. Notice that the major challenge in many areas of the world is still in moving their populations into school and beyond the primary level.

Table 4a shows data on the occupation structure used in the Cal-Global CGE Model. In addition to low educational levels, notice that a huge proportion of the world's labor force is still making its way from agricultural to urban activities. As a share of their non-agricultural labor force, most countries are facing majorities in the lower skilled occupations. Among the rich OECD countries, it is interesting to note that Southern California is both over-represented with low skilled as well as professional workers, while under-represented by moderately skilled workers (Table 4b). Table 5 shows data on sectoral employment and output for California compared to other regions. As should be expected from this comparison, labor is concentrated in poorer countries in agricultural activities which produce a very low share of output. Latin America, which is Southern California's primary immigrant sending region, has the worst ratio of employment concentration in low productivity sectors.[9] Southern California and the OECD, on the other hand, show relatively higher productivity ratios in capital and intermediate goods with high concentration of relatively higher paid workers. Immigrant and Latino workers are more concentrated in the lower wage and productivity sectors, exactly those where the most intense import competition is expected from lower wage countries.[10]

Table 6 shows data shows for the global matrix of trade. The Southern California data presented here are an estimation of both exports and imports based on local Customs Districts and are thus subject to limitations on interpreting the relation to local production. Yet it is nevertheless interesting to note that in 1992, while OECD trade represents the largest single regional partner, approximately two-thirds of trade is with low and moderate income countries. Trade though Southern California ran a large deficit primarily due to imports from other OECD countries (including Japan) as well as from China and Latin America. Southern California was running a trade surplus, however, with Asian NICs. Since 1992, the post debt crisis recovery in

[9] This is particularly a problem for Mexico, California's leading source of immigrants. Previous research has identified the grains sector as the largest potential sources of new immigrants, particularly under a scenario of rapid trade liberalization (see Hinojosa, Robinson 1992).

[10] See Hinojosa (1997) and Hinojosa et al (1996) for a detailed analysis of the impact of trade on minorities and immigrants in the labor force.

Latin America has reduced the trade deficit while a growth in exports to the Asian NICs reversed after 1997 due to the Asian financial crisis. Yet the general trend towards non-OECD trade has continued with Mexico surpassing Canada as California's second largest trading partner (after Japan).

The impact of future global trade liberalization on California will be a function of the relative sectoral productivity, the pattern of trade and the structure of tariffs. Table 7 show actual tariffs collected as a percentage of imports. For the purposes of our model, U.S. tariffs (and thus California) are average in with the OECD. In general, OECD rates are lower than those of its trading partners (except for China). Overall costs are thus potentially higher in developing countries, while the within regional distributional impacts of adjustments will be a function of the sectoral tariffs. For the OECD and California, tariffs are still highly concentrated in the lower productivity sectors with higher proportion of lower skilled labor force.

The OECD (mostly white European origin) is rapidly being overtaken in relative population terms, going from a quarter to less than a tenth of the worlds population in 75 years. California's white population has dropped just this year to below 50% for the first time in 150 years, and will be surpassed by the state's Latino origin population by 2015. This threshold has already occurred in Los Angeles county early in the 1990s. Within the rich OECD, California stands out as the first large regional economy that is already constituted by a multi-cultural pluralist population. This coincidence of demographic change could be a major advantage in the long run as the California region becomes more interdependent with a global population that is also becoming more diverse and non-Western. Yet in the short run, as we shall see below, the prospects are for growing inequality in both California and throughout the world along wage and skill lines that also mirror ethno-racial divisions.

IV. Alternative Long-term Scenarios of the Global Economy and their Implications for California

Using the California in Global Economy CGE model, we evaluated a number of long-term scenarios and their impacts on GDP, employment, income, trade, migration and capital flows. The Cal-Global CGE model was used to analyze the potential impacts of a series of alternative policy interventions that can change the current trajectory of long-term trade and investment, as well as the productivity path of different factors of production, and thus the pattern of income and employment adjustments. We specifically focused on the policies and investments that could substantially affect these alternative outcomes. In particular, the model will simulate alternative flows of investment resources for human capital, physical capital and R&D improvements.

First, we ran two "base" scenarios of growth and income inequality for all of the regions of the world in the model, including Southern California. The two base scenarios were designed to simulate the current status quo, which is leading to widening inequality throughout regions of the world, versus a scenario that would begin to close the gaps in inequality in all the regions of the world. Second, we ran a series of alternative scenarios of different policy options for greater global trade liberalization, including the modeling of productivity enhancing externality impacts of trade liberalizations. Finally, we analyzed the relative dimensions of investment and policy

interventions in human capital and R&D enhancements that would be required to redirect the adverse income distribution and employment adjustment trends implicit in current trends of global growth and integration. The Cal-Global CGE model allowed us to evaluate within a single framework, the long run relative impacts of different factor supplies (tangibles such as labor and capital), polices designed to increase the efficiency of factor allocation (trade liberalization), as well as improvements in different factor productivities (through investments in human capital and R&D).[11]

We examined possible future developments through two major scenarios concerning global growth, integration, and income distribution: a Status Quo/Divergence Scenario and an Integration/Convergence Scenario. The major difference between these two scenarios was the level of investment in human capital improvement, which we found to be the key significant determinate of the pattern of global growth and income distribution. The Status Quo/Divergence Scenario projected out current regional levels of educational expenditures, paths of skill improvements, and income widening. The Integration/Convergence Scenario simulated the levels of skill improvements and educational expenditures in each region that would be required to close the growth of income inequality for that region. Using each major scenario as a "base," we also ran two identical series of alternative "sub-scenarios" dealing with trade liberalization and other policy options designed to simulate a range of possible investments and their possible impacts on the pattern of global growth and income inequality.[12] The possibilities are summarized below:

1(A) **Divergence (Status Quo) Scenario:** Current base line projections of the future of income inequality in all major regions given the relatively low level of education expenditures around the world.

1(B) ***Convergence Scenario:*** *The impact on global production, consumption and trade of increased education and training investments that would be required to reduce or close income gaps in all regions around the world.*

2(A) **Divergence Scenario with Trade Liberalization:** Current base line projections (scenario 1(A)) with the additional impact of the full implementation of GATT Uruguay Round trade liberalization agreements.

2(B) ***Convergence Scenario with Trade Liberalization:*** *The impact of both increased education and training investments of scenario (1(B)) as well as the additional impact of the full implementation of GATT Uruguay Round trade liberalization agreements.*

3(A) **Divergence Scenario with Increased Research and Development Investments:** Current base line projections (scenario 1(A)) with the additional impact of increased Research and Development investments in all regions around the world instead of the educational investments of scenario (1(B)).

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[11] This is useful in addressing the long run implications of the current debate on the sources of growth in the so-called "Asian Miracle". See Kim and Lau (1992), World Bank (1993), Krugman (1994), and Young (1994).

[12] For a full presentation of the results, see Hinojosa, McCleery and de Paolis (1998).

3(B) ***Convergence Scenario with Increased Research and Development Investments :*** *The impact of both increased education and training investments of scenario (1(B)) as well as the additional impact of similar level increases in Research and Development investments in all regions around the world.*

4 **Divergence Scenario with Non-OECD Education Investments:** Current base line projections (scenario 1(A)), with the additional impact of increased education and training investments of scenario (1(B)) but only in non-OECD regions.

The two base scenarios and the other alternatives told us much about the possible future paths of the world economy and income distribution, as well as the relative efficacy of different policy and investment initiatives. The Divergence (or Status Quo) Scenario was a pessimistic, but probably realistic, scenario in which slow progress is made on the growth in investments in education. This scenario produced moderate growth with widening income inequality in most regions of the world. The effects of other policy measures such as trade liberalization and productivity enhancing R&D improvements did not fundamentally change the basic course of this scenario. Only the longer run enhanced productivity effects of trade liberalization were found to have a much more significant impact on growth. Yet even in this higher growth variation of the Status Quo and Divergence Scenario, income inequality continued to widen significantly.

The Convergence Scenario, on the other hand, was an optimistic, yet still realistic, scenario in which the vigorous and sustained pursuit of policies and investments which enhance educational levels of workers, particularly in both low and moderate income countries, produces higher rates of growth as well as substantial declines in relative, and in most regions, absolute levels of wage inequality. Within this context, trade liberalization and investment and productivity enhancing R&D improvements had the effect of further enhancing the closing of income gaps in most *developing* regions. In the *OECD and in Southern California* in particular, however, trade liberalization had the effect of widening income inequality, even as it increased overall growth. This was still not a scenario of bliss: workers had to continue to work hard for their living, and poverty was not eradicated. But it showed the potential for all groups of workers to share in the benefits of globalization and for an increase in the labor incomes of the poorest segments of the populations of even the lowest income countries, leading to a large reduction in global poverty. This in turn, generated the highest possible levels of long-term global trade and growth, albeit with widened income inequality in California.

V. Conclusions: California Policy Making Capacities and Options

As we approach the 21th Century, increased flows of trade, capital, migration, and culture we sparked a raging and highly divisive public debate concerning the long-term impacts of "globalization". Some argue that the impact of globalization is overwhelming virtually all aspects of economies and societies in the world today and is the primary cause of economic dislocation and widening inequalities.[13] Others argue that globalization has been the driving

[13] Nader (1993); Danaher (1997); Greider (1998).

force behind renewed productivity and growth in both North and South.[14] Liberalized trade, investment, and migration relations are seen alternatively as either a threat or boon to living standards and environmental sustainability in both rich and developing countries. Both sides of the debate do agree, however, that globalization has been accompanied by the declining power of the nation-state as it was know in the twentieth century, with many seeing political sovereignty as increasingly ineffectual at both the national as well as the local regional level. Given this focus on the importance of increased global flows, the most visible policy debates over the last few years on both the right and the left have been framed around either the blocking or accelerating of further international free trade and investment agreements (NAFTA, GATT, MIA and "Fast-track").

We argue that this debate is the wrong way to conceptualize the major driving forces of the world economy as well as the nature of urgent policy challenges currently faced and the potentially leading role of regions such as Southern California in the new global economy. Decades of research confirm that liberalized flows produce both gains and costs, with the more competitive sectors and workers winning and the less competitive losing.[15] Much more important to the pattern of inequality will be the global regulatory and development policy context which accompanies increased flows, as well as the capacity of regions to mobilize resources to take maximum advantage of opportunities and to prepare for labor market adjustments, both individually, collaboratively, and globally. The major argument of this chapter is that the crucial issues for Southern California's insertion into the world economy will be a function of how it develops institutional capacities for seizing strategic opportunities and preparing for coming adjustment. This is true in the major policy issues confronting Southern California in the 1990s (such as NAFTA, immigration, and the Asia Crisis), as well as crucial long run issues which are most rarely put on the region's policy agenda.

Using the Cal-Global CGE model we analyzed the implications of the fact that over the next 25 years, 99% of the new entrants into the global labor market will come from low and moderate income countries with relatively low levels of educational investments.[16] According to the results of the Cal-Global model, even without any further trade liberalization, these trends will result in growing income inequality with only moderate income growth in both developed and developing areas of the world economy.[17] Within the current trends, a scenario of trade liberalization would add slightly to global growth rates through more efficient resource allocation. Southern California, with its relatively larger low wage workforce among developed regions, is particularly vulnerable to a trend towards widening inequality, with or without further trade liberalization.

A more optimistic yet still realistic scenario does exists, however, which can result in a relative closing of the gaps between high and low wage workers worldwide, while at the same time significantly increasing global growth and trade. This scenario would require both: (1) developing countries to boost investments in basic education as well as new production technologies; and (2) developed countries to raise investments in job retraining, economic

[14] Kanter (1995); Business Week, 1998.
[15] Freeman and Abowd (1991); Hinojosa and Robinson (1992).
[16] World Bank, World Development Report, 1995
[17] Hinojosa, McCleery and De Paolis (1998).

adjustment, and innovation enhancing research and development. Such a scenario would both enhance the ability of the poorer countries to become highly productive and consuming members of the world economy as well as better prepare developed countries to extend the benefits of increase growth and exchange to its lower wage workers. Increased inter-regional trade, investment and migration flows can be mobilized to enhance global efficiency, growth and equity, but only if a network of participating regions across North and South make the necessary long-term investments and structural adjustments which can be mutually reinforcing and beneficial. Increased global interdependence can thus lead to either a widening or closing of income gaps depending on whether globalization proceeds along paths of restructuring and development which are either contradictory or complementary for the participating regions.

Our results show that trade liberalization, as well as additional investments in any of several areas can clearly augment growth, but that each has different consequences for income inequality. In virtually all cases, the dynamic externality growth effects of trade liberalization are greater than the gains in GDP observed in the shift from the Divergence to the Convergence Scenarios. Yet the effect of closing the gaps in wage inequality are much greater in the Convergence Scenario compared to the Divergence Scenario. Thus the Convergence Scenario with dynamic externality effects of trade liberalization produces the highest overall rates of GDP growth as well as the greatest closing of income gaps in all regions of the world economy.

Whether a particular region can excel in a globalize setting will depend heavily on its local capacity to make the necessary long-term investments and adjustments.[18] But it will also depend on the ability of its economic partners to be able to make similar commitments to their own investments and structural changes. Regions and regional policies thus do matter in the new global economy, with some analysts asserting that regional policies matter much more than before when regions were insulated within more equal national settings. Yet a scenario of enhanced global and regional growth with improved income distribution will require individual national and regional policy efforts, as well as cross regional strategic coordination and collaboration. This will necessitate a new regional policy focus that goes beyond a single region's competitiveness to include a focus on regions with which it has high degrees of interdependence.

It is within this context that we have to analyze the multiple challenges that California, and particularly Southern California, will face, not only in terms of our own local restructuring for regional competitiveness and equity, but also in terms of the relationships with our particular regional economic partners around the world. In meeting these challenges, three areas of analysis will be essential for which there has been an astonishingly little amount of data gathering and tracking given the trillion dollar size of the California economy:

(1) How Are We Linked?: We need a much more developed capacity to track and analyze the nature of California and Southern California linkages with other parts of the world through trade, capital and migration flows and to understand how these flows are related to the structure of the local regional economy. These flows have to be conceptualized as more than a series of bi-national linkages, but rather as a network of transnational relations which

[18] Storper, Scott, Porter

interact through the Southern California economy, creating a variety of "triangulated" relationships between the dynamics in a number of global regions which interact with our own local development dynamics. One example is the region's garment industry which has flourished through the interaction of with Latino immigrant labor, Asian entrepreneurial investments, and local design and marketing capabilities.

(2) How Are Our Partners Changing?: We also require a much more developed capacity for analyzing and forecasting the changing dynamics of the relationship between California and its major economic partner regions. This will require not only an analysis of long-term scenarios of the global structural changes that will be crucial for Southern California, but also an analysis of a series of more near term dynamics, including the evolution of NAFTA, alternative immigration policies, and the impact of economic crisis in Asia and other regions. We need to be able to analyze how California economic and social dynamics are linked simultaneous to the Asia crisis, for example, through our capital and product markets, as well as to the Latin America rural transformation though our historical labor market interdependence with that region.

(3) How Are We Changing?: Finally, we need to developed a much more evolved capacity to meet the dual challenge of preparing the region's economy for increased globalization at the same time that Californians will have to work out a new political and institutional order based on the region's transition to a multicultural society. While the region's political-economic institutions were historically formed in a much more homogeneous ethnic context within a closed and relatively young economy, the region is now needing to develop consensus on complex restructuring and costly long-term investment decisions in a context of a highly divisive body politic.

California's dual challenge thus includes, on the one hand, the fact that the region is undergoing a rapid opening to a wide variety of regions around the world. On the other hand, the region is facing a dramatic ethno-racial transformation from a majority single- ethnic dominate society towards a diverse multi-cultural one. The region will thus have to undertaken important investments in skill upgrading and retraining and adjustment as well as increased investments in infrastructure, business and community development to maximize opportunities. These steps must be undertaken in a context of a polarized labor market with a large low wage manufacturing labor force facing import competition along with a more narrow group of higher wage competitive workers. This greater ethnic and cultural diversity, however, can also provide new opportunities and advantages that need to be harnessed as we increasingly trade, invest, and negotiate with multiple regions around the world.

Table 1. CAL-GLOBAL World Model Database Components

A.- Regions/Country Clusters:

1. Sub-Sahara Africa
2. Southern Asia
3. China
4. Other low-middle income countries
5. Asia newly industrialized countries
6. Latin American countries
7. transitional countries (former USSR Bloc)
8. Rich OECD countries (Non-US Japan, and EU)
9. United States
10. Southern California
11. Rest of the World

B.- Sectors of Production:

1. grains including processed rice
2. other agriculture
3. forest and fishing
4. energy and minerals
5. food processing
6. textile apparel
7. wood and paper
8. basic intermediate
9. capital goods
10. services
11. tariffs

C.- Factors of Productions

1. capital
2. agricultural labor
3. rural agricultural labor
4. urban non-skilled labor
5. skilled labor
6. urban skilled labor (professionals)

D.- Labor Mobility

The model is originally set to consider the mobility of labor across categories: Intra-regional mobility (only within a given region) from Rural Agriculture to Urban Non-skilled Labor.

E.- Households and Institutions

1. Households
2. Institutions: labor (returns on labor, wages)
3. Enterprises (returns on capital, profits)
4. Property income (returns on land, rents)

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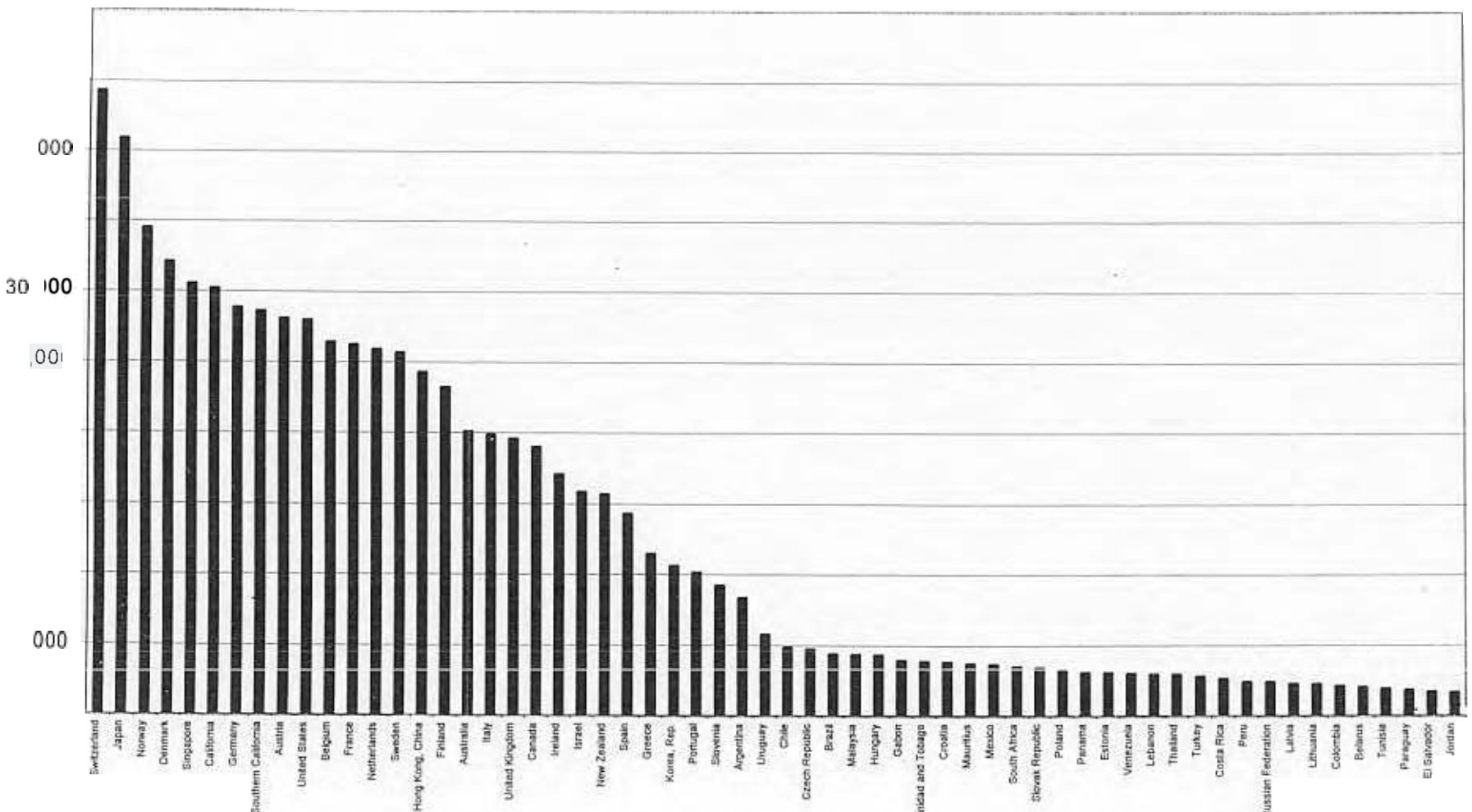

Chart 2. Trade as Share of Gross Domestic or Gross State Product

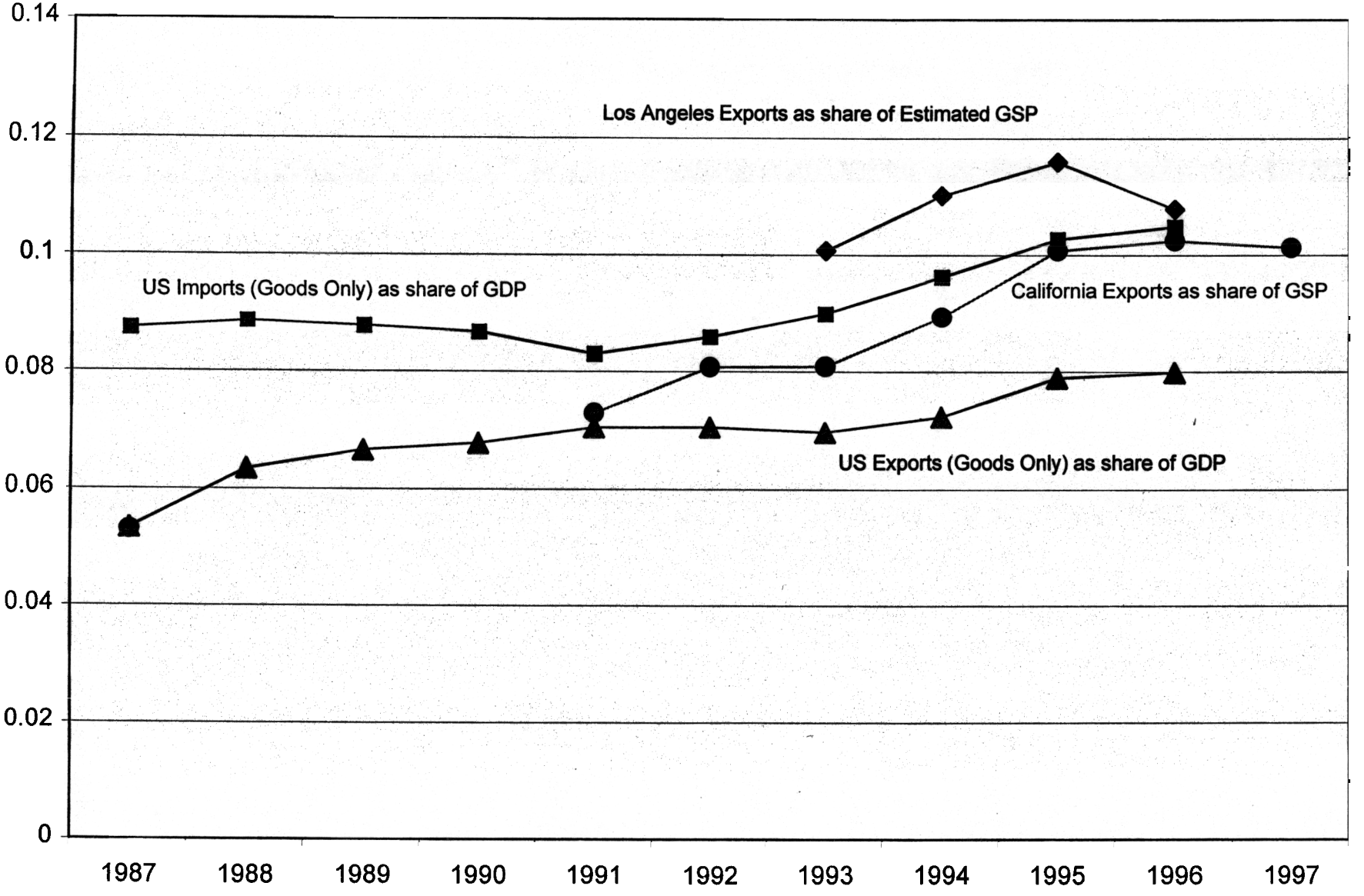

Table 2. General Indicators by Regions (1992)

	GDP	Population	GDP/capita	Import	Export	Investment	Education Expenditure	R &D Expenditure
	(Billion US$)	(Million)	(US $)	(% of GDP)	(% of GDP)	(% of GDP)	(% of GNP)	(% of GNP)
S.Cal	376.80	17,200	23,237	28.13	19.38	19.20	4.01	4.30
OECD	17,154.07	781,063	21,962	5.71	5.93	20.10	4.80	2.32
ANIC	873.86	119,487	7,313	42.59	52.78	33.70	3.93	1.83
LNIC	1,308.46	445,490	2,937	15.47	11.94	19.40	4.03	0.37
LMID	513.63	200,914	2,556	20.59	27.24	25.00	4.59	0.30
TRAN	829.52	417,146	1,989	9.84	9.06	18.60	3.95	0.66
CHN	519.15	1,193,208	435	28.37	20.42	24.70	2.00	0.60
LOW	521.58	1,522,711	343	20.48	14.89	23.50	3.10	0.18
SSA	163.04	499,260	327	30.37	24.70	16.30	2.58	0.04

Source: Education Expenditure: World Education Report 1995, UNESCO; R&D data Data: UNESCO Statistical Yearbook 1997, UNESCO
Other data :IDB-World model (1998) , California Department of Finance, National Science Foundation

OECD: Australia, New Zealand, Canada, US (minus S.Cal), Japan, Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Norway, Spain, Sweden, United Kingdom;
S.Cal: Five Southern California Counties
ANIC: Korea, Singapore, Malaysia, Thailand, Taiwan
LNIC: Argentina, Brazil, Mexico, Chile, Colombia, Venezuela
TRAN: Albania, Belarus, Bosnia, Bulgaria, Croatia, Czeh Republic, Estonia, Hungrary, Latvia, Lithuania, Poland, Republic of Moldavia, Romania, Russian Federation, Slovakia, Slovenia, The FYR of Macedonian, Ukraine, Yugoslavia
LMID: Algeria, Egypt, Libyan Arab Jamahiriya, Morocco, Tunisia, Iran , Iraq, Jordan, Kuwait, Saudi Arabia, Syrian Arab Republic, Turkey
CHN: China, Hong Kong
LOW: Indonesia, Philippines, India, Pakistan, Bangladesh
SSA: Anglola, Benin, Botswana, Bulkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad Comoros, Comoros, Congo, Cote divoire, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gobon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Somalia, Sudan, Swaziland, Togo, Uganda, Tanzania, Zaire, Zambia, Zimbabwe.

Table 3. Education Structure

	No School	Primary School Only	Secondary School Only	Higher Education	Total
S.Cal	7.9	34.21	39.11	18.78	100.00
OECD	5.81	35.02	40.25	18.91	100.00
ANIC	20.15	43.31	26.91	9.63	100.00
LNIC	25.46	55.59	12.97	5.97	100.00
LMID	27.63	41.79	26.43	4.15	100.00
TRAN	18.40	35.49	32.44	13.68	100.00
CHN	24.49	47.96	26.40	1.16	100.00
LOW	40.79	35.78	22.19	1.24	100.00
SSA	61.33	29.44	8.52	0.72	100.00

Source: Trends and Projections of Enrollment by Level of Education, by Age and by Sex, 19960-2025 (as assessed in 1993)

Table 4a. Labor Force by Categories (1992) Unit: Percentage (New)

	SSA	LOW	CHN	LMID	ANIC	LNIC	TRAN	S.Cal	OECD
Agricultural Labor	70.0	61.3	65.7	29.9	39.7	25.3	13.3	0.2	4.3
Non Agricultural Labor	30.0	38.7	34.3	70.1	60.3	74.7	86.7	99.8	95.6
Unskilled Labor	16.2	21.9	22.4	41.1	31.7	42.5	53.2	50.2	45.0
Skilled Labor	9.8	13.0	4.1	15.0	19.7	21.1	9.3	23.8	27.4
Profesionals	4.0	3.8	7.8	14.0	8.9	11.1	24.2	25.8	23.2

Source: IDB-World Bank model (1998), California Department of Finance

Table 4b. Non Agricultural Labor Force by Categories (1992) Unit: Percentage (New)

	SSA	LOW	CHN	LMID	ANIC	LNIC	TRAN	S.Cal	OECD
Non Agricultural Labor									
Unskilled Labor									
Skilled Labor									
Profesionals									

Source: IDB-World Model (1998), California Department of Finance

Table 5. Employment and Output Shares

	SSA		LOW		CHN		LMID		ANIC		LNIC		TRAN		OECD	
	Employ	Output	Employ	Output	Employ	Output	Employ	Output	Employ	Output	Employ	Output	Employ	Output	Employ	Output
GRAIN	22.1%	17.3%	22.2%	8.2%	23.3%	7.8%	7.2%	0.9%	13.2%	6.8%	5.4%	1.8%	2.8%	0.9%	0.9%	0.6%
OTHAG	39.6%	9.1%	32.9%	11.1%	33.3%	9.8%	16.2%	3.9%	18.2%	5.5%	16.3%	5.5%	7.9%	2.2%	3.0%	2.0%
FANDF	8.3%	2.5%	6.2%	3.0%	9.1%	2.1%	6.5%	1.2%	8.3%	1.6%	3.6%	1.0%	2.5%	0.7%	0.5%	0.5%
MINES	2.6%	8.4%	2.0%	3.2%	1.7%	2.6%	3.8%	14.1%	1.6%	3.0%	2.1%	3.0%	2.5%	3.6%	1.6%	2.5%
FOOD	1.3%	8.3%	1.5%	8.2%	0.9%	6.4%	2.3%	6.7%	1.7%	6.8%	4.1%	9.9%	3.3%	6.2%	3.3%	5.8%
TEXT	1.2%	4.5%	2.7%	8.6%	4.7%	11.2%	2.5%	4.6%	4.1%	7.8%	4.1%	6.2%	3.1%	3.7%	2.7%	2.8%
WOOD	0.7%	2.3%	1.2%	3.0%	1.2%	2.8%	1.9%	2.3%	2.0%	2.6%	2.3%	3.1%	3.4%	3.9%	3.4%	3.8%
INTER	2.0%	11.0%	3.0%	10.5%	3.6%	13.0%	4.1%	10.1%	5.4%	14.2%	7.8%	14.0%	7.0%	11.3%	6.1%	9.9%
CAPGD	1.6%	7.0%	3.0%	8.0%	3.8%	10.8%	3.8%	5.7%	8.0%	13.9%	6.2%	7.9%	9.0%	9.8%	10.7%	12.2%
SERV	20.5%	29.6%	25.3%	36.1%	18.4%	33.6%	51.6%	50.4%	37.5%	37.7%	48.0%	47.7%	58.5%	57.8%	67.8%	59.9%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: IDB-World Model (1998), California Department of Finance

Table 6. Export Matrix by Regions (1992)
Billion US$

	S. Cal	OECD	ANIC	LNIC	LMID	TRAN	CHN	LOW	SSA	Total
S.Cal		23.446	30.958	6.024	0.487	0.155	4.106	1.792	0.063	
OECD	32.743		227.357	152.768	75.286	53.173	60.181	57.627	34.298	
ANIC	14.910	198.729		8.406	10.535	3.122	60.17	19.072	5.248	
LAC	29.163	80.677	3.993		3.128	0.757	1.475	1.413	0.905	
LMID	0.126	197.729	33.117	16.28		4.017	4.145	12.593	1.7	
TRAN	0.056	54.307	1.659	1.205	1.044		3.381	1.702	0.135	
CHN	11.155	66.261	49.352	2.98	2.011	2.566		2.978	1.059	
LOW	2.912	59.556	14.619	0.806	2.03	2.536	3.514		1.018	
SSA	0.061	34.696	0.981	1.939	0.542	0.16	0.483	0.876		
Total	91.126	715.401	362.036	190.408	95.063	66.486	137.455	98.053	44.426	

Source: IDB-World Model (1998), California Department of Finance

Table 7. Tariffs Collected as Percentage Of Imports

	SSA	LOW	CHN	LMID	ANIC	LNIC	TRAN	OECD
SSA		11.07%	22.57%	6.27%	46.99%	5.36%	5.63%	7.75%
LOW	7.96%		18.27%	24.19%	14.61%	27.79%	3.71%	10.33%
CHN	7.55%	16.32%		3.08%	7.54%	13.09%	14.11%	15.85%
LMID	2.24%	3.71%	6.51%		2.67%	2.12%	3.44%	5.29%
ANIC	5.81%	9.90%	7.50%	8.71%		14.70%	8.97%	14.17%
LAC	16.13%	8.56%	30.31%	6.52%	31.13%		21.14%	21.32%
TRAN	8.89%	14.92%	6.48%	8.72%	17.36%	9.88%		8.90%
OECD	7.24%	9.31%	18.58%	4.32%	7.30%	8.10%	8.45%	

Source: IDB-World Model (1998).

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