Transnational Migration, Remittances and Development in North America: Globalization Lessons from the OaxaCalifornia Transnational Village/Community Modeling Project

Raul Hinojosa Ojeda
UCLA
NAID Center

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UCLA NAID Center

While much attention has recently been given to the developmental impacts of Globalization, defined primarily as the liberalized flows of trade and investment, this report argues that the process of migration, remittances and the formation of transnational communities, along with associated policy responses, can have a much greater impact, both positive and negative, on the prospects for sustainable development and equity in both rich and developing countries. The principal findings of this report are that transnational policy coordination in the North American context, specifically focused on improved remittance intermediation for investment in both migrant sending and receiving areas, can have potentially dramatic effects on improving the living conditions of transnational migrant families, as well as the sustainable and equitable development of communities in both the U.S. and Latin America. Using transnational SAMs and CGE models[1] of Mexican Oaxacan villages and U.S. California immigrant communities built with household surveys from migrant sending and receiving households, we report that improved transnational financial intermediation and investment of remittance funds can increase the income multiplier effect in migrant sending villages on the order of five to ten times. The report also indicates that failure to transnationally reform the current pattern of undocumented migration and cash-based remittance flows, on the other hand, will likely deepen the current cycle of US demand for low-wage migration and increased US income inequality, as well as extroverted dependence, low productivity and higher labor outflows in migrant sending regions of Mexico.

The fundamental conclusion of this report is that the full impact of Transnationalism, defined as globalization via migration and remittances, has not been properly understood or measured by researchers and policymakers. This is the case both in terms of the current GDP multiplier effects of migration and remittances, as well as the potentially much higher multiplier effects obtainable through policy reforms designed to mobilize transnational community networks and resources in both developed and developing countries. The major contribution of this report is to provide a micro transnational SAM/CGE framework and empirical cases studies that can now be used to calibrate the full multiplier effects of migration and remittance policy reforms on a macro regional and global scale.

The report has four parts: First, we place the transnational migration/remittances dynamic in a comparative context with other globalization trends, specifying the huge

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[1] This report presents trans-nationally constructed social accounting matrices (SAMs) and computable general equilibrium (CGE) models of villages in Oaxaca, Mexico and communities in California.

relative value added contributions of transnational communities at the Global ($2.1 trillion), North American ($1.1 trillion) and Oaxacan/Californian levels. We also review the CGE modeling results on the projected impacts of trade liberalization accords at the global and North American level, which we find to be only a fraction of the potential impacts of transnational policy reform in the areas of migration liberalization and remittance reform.

Second, we review the theoretical and policy debates with respect to the relationship between migration, remittances and development. Most classical and neoclassical economic theorists saw Southern out-migration as a resource drain that nevertheless helped resolve under-employment pressures, while Northern immigration was seen as potential source of productive labor that could also depress some wages in the North. Migration policy was mostly focused on Northern labor market regulatory goals. New research and theoretical perspectives have focused attention on how migration and associated remittance flows can also be used to improve development prospects. The "New Economics of Labor Migration" literature suggests more potential benefits from migration and remittances in the South, while the "New Transnationalism" approach analyzes important benefits on both sides of the border. Transnational SAMs and CGE models are seen particularly well-suited tools for modeling both the potential positive, as well as negative, cycles of cross-border cumulative causation due to migration and remittance flows. Transnational policy responses across both the North and South, however, have lagged considerably despite new theory and research.

Third, we review the results of the transnational modeling from the OaxaCalifonia project where seven migrant sending villages and two transnational communities were surveyed at the household level. The data illustrates a current pattern of negative cumulative causation consisting of: high levels of rural out-migration, strong dependence on external income, weak local production and weak local employment, all resulting in greater out-migration. Alternative modeling scenarios, however, show that increased financial intermediation and investment of remittance flows through local (rural) financial markets and institutions can reverse cumulative causation from negative to positive, increasing the local multiplier effects of remittances by 5x (Santa Ana del Valle) to 10x (Talcolula and Abasolo), significantly increasing local income and production, as well as reducing out-migration pressures.

Fourth, we conclude with a framework for evaluating the impact of policy interventions in the OaxaCalifornia arena now being supported by IDB investments which seek to integrate (1) rural broadband technology, (2) community micro-banking, and (3) productive projects for regional and international markets. In particular, we propose how to measure the results of policy interventions that seek to build synergy between rural satellite broadband, international debit card technology, and exports to relatively huge Diaspora markets for regional goods. Unleashing the potential of this synergy, however, will require transnational policy coordination that must include governments moving to broaden access to the banking/credit union system through increased documentation of the undocumented, facilitation of local social and political participation, and the general empowerment of transitional migrant networks.

(1) Globalization, Regional Integration and Transnationalism

The full impact of Transnationalism, defined as globalization via migration and remittances, has not been properly understood or measured by researchers and policy makers. Transnationalism has been ignored or underestimated in terms of its historical impact, current GDP multiplier effects, as well as future potential multiplier effects obtainable through policy reforms designed to mobilize transnational community networks and resources. Most of the discussion on globalization in the last decade has focused on trade and financial flows, with analysis typically only stressing either the positive or negative effects of policies associated with the liberalization of these flows. Unfortunately, most of the globalization discussion has completely ignored the flows of labor migration and remittances.[2] Similarly, the policy discussion on labor migration and remittances is definitely not focused on the liberalization of these flows in the way the Washington Consensus has emphasized trade and financial liberalization. Policy discussion on labor migration and remittances are often focused on the negative social disruption costs in rich countries, rather than on the beneficial "gains from trade" that they can provide to both rich and poor countries.

Only recently have the transnational flows of workers and the associated flows of remittances, communications and cultures, begun to gather some attention relative to the discussion of the globalization of trade and financial flows. The MIF of the IDB has been a pioneer in a systematic description of these flows in the Western Hemisphere. So far, however, most of this new attention consists of "back of the envelope" calculations[3] or misguided comparisons of historical growth rates of trade verse migration (World Bank 2003). A critical reading of the World Bank's own recent analysis of the Doha Round, however, also reveals an obfuscated yet crucial finding contained in the different CGE modeling work that they cite: a much larger impact from world migration liberalization (160 billion a year) than from world trade liberalization (350 billion over ten years).

With respect to the importance of current patterns of transnationalism, the report shows how the impacts of labor migration and remittances are usually highly underestimated. Beyond simply comparing growth rates of trade versus migration and remittances, in this report we present estimates of the full value added contribution of Diaspora populations at the Global and North American levels (2.1 and 1.1 trillion, respectively). While remittances are indeed large, they actually only represent but one component of a much larger transnational community economy that produces a wide range of benefits for developed and developing countries. The relative importance of Diaspora GDP and remittances are shown to particularly large in the North American case, and even more impressive in the OaxaCalifornia case.

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[2] Leading critiques of globalization by Stiglitz (2002) and Soros (2002), for example, completely ignore migration and remittance flows. Recent World Bank analysis, as we shall see, provides only minor treatment on the issue.

[3] Dani Rodrik (2002) is one of the few to address issue, both only in an admittedly "back of the envelop" fashion.

With respect to potential future impacts of trade versus migration/remittance policy reforms, the report reviews the few studies available in the literature. All point to a much larger impact on income in both developed and developing countries from the liberalization of migration compared to the liberalization of trade. Yet while most trade studies have included the much larger dynamic CGE modeling effects of liberalization, compared to the mere comparative static CGE effects, it is interesting to point out that it is the static CGE migration liberalization model that produce the much larger impacts over the dynamics CGE effects of trade models. No migration models have yet been published which include dynamic CGE effects of migration, let alone CGE models with dynamic remittance effects. This review will set the stage for the potentially important contribution that this report can provide as a first step in developing a CGE model of the fully dynamics effects of migration liberalization and mobilization of remittances in both developed and developing countries.

1.1   Sizing the Transnational Community Economy

In this section we place the transnational migration/remittances dynamic in a comparative context with other globalization trends, focusing on both the comparative historical record of these trends as well as specifying the relative value added of the transnational community at the Global, North American and Oaxacan/Californian levels. Recent attempts to compare the relative effects globalization of trade and financial flows relative to migration and remittances have principally focused on the relative growth rates of these flows in the last few decades. The World Bank (2003), for example, while commendably adding a chapter on "Labor Mobility and the WTO: Liberalizing Temporary Movement" to their report on World Economic Prospects 2004, nevertheless downplays the importance of these flows by observing that: "Since World War II, globalization has led to more unrestrictive movements of both goods and capital, while international policies toward migration have become more restrictive. As a results, the overall scale of labor migration remains relatively smaller than that of capital or trade flows."[4]

This focus on the Post WW-II historical record as a basis for comparison of globalization and transnationalism is misguided. Focusing on the last two decades is more appropriate since it is the period of the highest growth in globalization and transnationalism trends. Most interestingly, a focus on the last 20 years reveals very similar growth rates in trade and remittances, as well as migration, particularly compared to global out put. Figure 1.1 shows that global remittance growth has even outpaced surging trade growth in the last 20 years.

While a longer-term historical perspective that includes the 19th century shows that current levels of global migration are low with respect to global trade, this is actually indicative of the huge potential of transnationalism in the current era. Policymakers should particularly focus on the very positive impacts that migration and remittance flows

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[4] World Bank (2003), p.143.

had as dramatic developmental and income-equalizing forces on a global scale a century ago (Lindert and Williamson, 2003, as well as Chiswick and Hatton, 2003).

Figure 1.2 shows similar data for the North American case, indicating that Mexican remittance growth has even outpaced surging U.S.-Mexico trade growth in the last 20 years, interestingly even after NAFTA was established in 1994. A focus on the last 20 years also shows very similar growth rates in the Mexican transnational population, both U.S. and foreign born.

The impacts of labor migration and remittances are usually highly underestimated particularly with respect to the importance of current GDP contributions of the transnational migrant community on both sides of the border. Rather than simply comparing growth rates of trade versus migration and remittances, or of the often-quoted household income of immigrants and "Hispanics", in this report we also present estimates of the full value added contribution of Diaspora populations at the Global and North American levels (2.1 and 1.1 trillion, respectively). While remittances are indeed large, they actually only represent but one component of a much larger transnational community economy that produces a wide range of benefits for developed and developing countries. The relative importance of Diaspora GDP and remittances are shown to particularly large in the North American case, and even more impressive in the OaxaCalifornia case.

Table 1.1 presents data on the global Transnationalism

- The Global Diaspora population of 180 million produces a GDP over \$2.1 trillion, which if combined as a whole would represent the 3rd largest economy of the world.

- Global remittances are conservatively estimated by the IMF as 105 bn, only a fraction of Diaspora GDP, indicating a potentially much larger role for the transnational population in the economies of developed and developing countries.

Tables 1.2 and 1.3 show data on North American transnationalism

- The US has a larger share of foreign-born population than the average developed or developing region of the world, and contains a larger share of global Diaspora GDP.

- The total foreign-born population of the US is 28.5 million, generating value added of 826 billion. This is much more than total remittances and total foreign-born household income of 418 billion (Table 1.3).

- Total Latin American and Mexico foreign-born population in the US are 14.5 and 7.8 million respectively, generating 372.5 and 200.4 billion in value added.

- Total Latin American and Mexican Origin populations in the US is 35 and 22 million respectively, generating over 1 trillion and 635 billion in value added.

- The value added totals of the Latin American transnational populations in the US are much larger than the typically used figures of "Hispanic" and Mexican origin household incomes of 466 and 279 billion respectively, both of which are much larger than the commonly quoted totals for remittances.

Table 1.4 presents data on Oaxaca-California Transnationalism.

- California has a much larger share of foreign-born population than the US, as well as a larger share of foreign-born value added. Mexican origin and foreign-born are the largest sources of this transnational pollution and value added.

- Oaxaca's transnational population is also a much larger share than the average for Mexico (1:3.4 compared to 22:100), while the proportion of value added produced by Oaxacans in the US (29.5 bn) is nearly 5 times that of Oaxaca (6.7 bn), compared to a nearly even ratio for the Mexican origin population in the US (635 bn) compared to the Mexican GDP as a whole (497 bn).

1.2   Modeling the Impacts of Transnationalism and Globalization

This section reviews modeling data on the projected impacts of trade liberalization accords as a basis for comparing the potential impacts of transnational policy reform in the areas of migration and remittances. Most modeling studies on a global and regional level have only concentrated on trade liberalization, with very few even attempting to model migration flows, let alone migration liberalization policy options. We show here, however, that a comparative review of these trade and migration studies show much bigger potential impacts from migration liberalization than from trade liberalization. No published studies have as of yet incorporated remittance policy reform as a measurable variable. Given the importance of remittances and the obvious a need for understanding potential impact of remittances, this paper provides a micro-economic basis for the use of macro-CGE modeling

1.2.1   Global Trade and Migration Modeling

With respect potential future impacts of trade versus migration/remittance policy reforms, we review the few studies available in the literature. All point to a much larger impact on welfare in both developed and developing countries from the liberalization of migration compared to the liberalization of trade.

Most recently, the World Bank (2003) has published a series of studies in its <u>World Economic Prospects 2004</u> on the potential impact of successful WTO global trade liberalization round, the so called" Doha Development round." Tables 1.5 presents data from the one of the original CGE modeling study used to reference the impact of trade liberalization on global and regional output. This CGE model by Francois, Van Meiji and Tongeren (2003) is typical for database that is used (GTAP) as well as for construction of liberalization in both a the CGE comparative static mode (constant returns

to scale) and dynamic mode (increasing returns to scale). Typical of these CGE models, the results in the dynamic mode are much bigger (from 3 to 10 times) than the static mode. The Global income effects after the implementation of full liberalization (over ten years) of all border measures and allowing the effects to work themselves throughout the economy is estimated at 355 billion (compared to the more conservative $132 bn in the static mode). Using an unpublished modeling exercise that included even more "externalities", the World Bank (2003) further estimates that trade liberalization that eliminates tariffs, quotas, and anti-dumping duties, combined with the elimination of agricultural export subsidies and, "decoupling" of domestic subsidies to minimize trade distortions, all "implemented progressively over five years to 2010 and accompanied by a realistic productivity response," would results in a $350bn increase in developing country income by 2105.[5]

While these dynamic CGE generated income numbers seem large, it is interesting to compare them to the more conservative version of a migration liberalization exercise. To its credit, the World Bank also included a chapter on "Labor Mobility and the WTO: Liberalizing Temporary Movement" where they cite one of the few CGE modeling studies on "Liberalizing Labor Mobility".[6] Table 1.6 indicates that a standard comparative static CGE modeling using the same GTAP database shows that if a relatively modest scenario of a "temporary visa system were introduced in rich countries permitting movement of up to 3 percent of the total labor force, world incomes would rise by nearly $160 bn" (World Bank, 2003, p.143). Left out of this quote is that this $160 bn static CGE migration liberalization impact is an **annual result,** compared to the often-quoted $350 bn over ten years for dynamic CGE trade liberalization. It is also important to note that the Winters, et al., (2003) CGE model does not include dynamic effects such as increasing economies of scale (as in the World Bank and Francois, et. al., models). It also does not include any dynamic impacts potentially associated with remittance flows. Remittances in the Winters, et al., model simply play an accounting role of transfer income from North to South, with no multiplier effects.

Thus while most global trade studies have included the much larger dynamic CGE modeling effects of liberalization compared to the mere comparative static trade CGE effects, it is interesting to point out that it is a static CGE migration liberalization model that produces a much larger income impact as compared to the dynamic CGE trade models. No migration models have yet been published which include dynamic CGE effects of migration, let alone CGE models with dynamic remittance effects. This paper is thus designed to set the stage for a first step in developing a global CGE model of the fully dynamics effects of migration liberalization and mobilization of remittances in both developed and developing countries.

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[5] World Bank press release, September 3, 2003 World Bank Report "World Economic Prospects 2004" Specifically, chapter 3, page 105. .http://wbln0018.worldbank.org/eap/eap.nsf/Attachments/03-0904-PR-GEF/$File/03-0904-PR-GEP.pdf

[6] Alan Winters, Terrie Walmsley, Zhen Kun Wang, Roman Grynberg (2003). **Liberalising Labour Mobility Under the GATS.** *Economic Paper 53*, Commonwealth Secretariat, London.

1.2.2 North America Trade and Migration CGE modeling

North America is one area of the world where there has been more extensive modeling of trade and migration integration.   Early in the NAFTA discussion a number of researchers pointed out the importance that the relationship between trade liberation and migration may have on the net outcome of NAFTA and North American integration.[7] Hinojosa and Robinson (1991) and Levy and von Winbergen (1991), for example, were the first to point out with the use of CGE models that Mexican agricultural tariff, quota and subsidy liberalization could generate huge real income declines in the rural sector, provoking large scale migrations to the U.S. whose effects on US output (positive), low wage earners (negative) and high wage earners (positive) would far outstrip any projected impacts, either positive or negative, attributable to NAFTA trade liberalization. It was also show that the displacement effects due to NAFTA could be addressed with comparatively small economic transfers to households and regional investments funds. This research set the stage for major policy initiatives directed towards dealing with adjustments in the lower wages rural and border areas, including PROCAMPO and the North American Development Bank.

Tables 1.7 and 1.8 shows the results of a typical CGE modeling exercises of NAFTA and Migration.[8] As is common in the CGE literature on NAFTA, static gains are a fraction of dynamics gains associated with trade liberalization, in both Mexico as well as the U.S. and California. It is interesting to point out, however, that the U.S. and California actually gain far more from the Mexican immigration caused by NAFTA than from NAFTA itself, especially in the comparative static modeling of trade and migration. Much more interesting is the fact that the relatively minor increase in migration under NAFTA benefits the U.S. even more than the dynamic CGE benefits of NAFTA.

During the 1990s, a number of CGE model were built to study the ongoing relationship between trade liberalization and migration. Some used village level CGE models of Mexican villages to specifically question the likelihood of large scale out migration from Mexico due to the introduction of PROCAMPO and other newly initiated Mexican rural income adjustment programs as well as the ability of local production substitutions.[9] Other researchers specifically modeled the impact of alternative U.S. migration policies on levels of migration, wages, and income development on both sides of the border. These studies indicated that not only is the U.S. a major beneficiary from large scale Mexican undocumented migration, but that attempts to eliminate this migration flows (through restrictive immigration laws and Proposition 187 in California) would have disastrous effects on the U.S. and California economies.[10] This would have the ironic effect of actually boosting labor supply and output in Mexico at the cost of reducing Mexican wages and remittances. Other studies focused on the impacts of a

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[7] For a review of NAFTA CGE modeling, including trade and migration models, see Hinojosa and McCleery (2002).
[8] Hinojosa et al. (2001), http://naid.sppsr.ucla.edu
[9] Taylor and Yunez (XXXX).
[10] Proposition 187 models, Hinojosa and Schey (1998).

"New Migration Accord" being discussed between the US and Mexico, increasing the legalization of current and future migration flows.[11] Based on survey data of the impact of the last major legalization in the US in 1986 with IRCA (Immigration Reform and Control Act)[12], modeling results show that legalization of undocumented labor would increase the "social wage" floor for US low skilled wages, actually reducing demand for Mexican migration in the US. It is also hypothesized that the ironic consequences of reduced US output and Mexican rural wages can be addressed increases in US migrant human capital and productivity[13], and much improved financial intermediation of remittances in migrant sending regions of Mexico.

Tables 1.9a and 1.9b presents the results of CGE models of alternative scenarios of migration policies. The status quo scenario 1a shows that the US and California benefit ($154 bn and $66 bn respectively per year) from undocumented migration from Mexico (estimated net annually at 300,000 for the U.S. as a whole, half of that to California). A potential increase in undocumented migration with NAFTA (scenario 1b) adds an additional $12 bn to the US and $1.4 bn to California GDP. Scenario 2a models the deportation of all undocumented workers from California (Proposition 187), reducing US income by $77bn and $32bn for California, while scenario 2b models the application of this policy across the US. Scenario 3, on the other hand, presents the results of a new round of US legalization of current and future migration, resulting in an increase of US and California rural and unskilled wages, lower returns to capital and skilled workers (the consumers of goods made with cheap immigrant labor), and a reduction in US real GDP. Mexican output and returns to capital rises as less US migration increase the Mexican labor supply and decrease real wages, particularly in the rural sector. Scenario 4 is a hypothetical scenario where by a US legalization is accompanied by increasing US productivity of low wage labor (via a doubling of human capital improvements offsetting legalized migrant wage increases) and by increasing Mexican the productivity of investment in the rural sectors (increasing rural output and wages which offsetting declining remittance flows).

This modeling shows that a plausible Scenario 4 can be created which produces a "win-win" outcome of increasing US and Mexican output and wages, while reducing dependence on low wage migration. What we need now is actual empirical cases studies in a micro transnational SAM/CGE framework that can be used to calibrate the full multiplier effects of migration and remittance policy reforms on a macro regional and global scale.

The issue is not only that the wage differentials are much bigger than price differential, and thus closing the wage gaps from freer migration gives you more "gains from trade" than freeing prices from trade liberalization. This is only the beginning of

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[11] Hinojosa, et al., (2001), web site

[12] US Department of Labor, Effects of the Immigration Reform and Control Act: Characteristics and Labor Market Behavior of the Legalization Population Five Years Following Legalization, 1996.

[13] The US DOL (1996) found abundant evidence that "legalization appears to have been a turning point for increased human capital investment, "representing more than a doubling of the previous rate of human capital accumulation for most origin groups of immigrants" who undertook "a surge of investment in language skills, education and training." P. 45.

the story. The real issues is that the current role of Transnationlism in the world economy generates a important negative cumulative causality, while changes in this area could produce a hugely positive cumulative causality, much more significant for reducing poverty and inequality than trade and financial liberalization.

(2) The New Transnationalism: Theoretical and Policy Perspectives

In this section we review the theoretical and policy debates with respect to relationship between migration, remittances and development. We review the rise of new theoretical perspectives, including the New Economics of Labor Migration and the new Transnationalism. We also review the theoretical concepts used in the New Transnationalism literature, particularly the concept of Negative Cumulative Causality and Positive Cumulative Causality as they relate to transnational linkages of communities through migration and remittance flows. We also show how CGE models, built on SAMs are particularly well-suited tools for modeling both the potential positive as well as negative cycles of cumulative causation. This section is designed to identify how, despite new theory and research, transnational policy responses in both the North and South continue to lagged considerably in their vision and development.

2.1   Theoretical and Policy Significance of the Research Report

The proposition has recently been advanced that migration policy reform can potentially have a more significant impact on the efficient allocation of global resources than the trade and investment liberalization. Preliminary analysis with the NAID Center CGE models indicates that North American migration and remittance policy reform can have a very substantial impact on income growth and poverty reduction in migrant sending regions and that these impacts can be much greater than those associated with trade and investment liberalization.

This research report seeks to make a contribution by being the first to provide empirically based micro-foundations for the analysis of the transnational relationship between migration, remittance and development dynamics. The findings of the micro-SAM and CGE dynamics can then provide a crucial foundation for the setting of parameters and dynamics of the NAID macro-CGE model of trade, migration and development in North America.

This report builds significantly on the research that the NAID Center has been conducting through a dual-level, macro and micro agenda to the study of Western Hemispheric integration through trade, capital and labor flows. On the micro side, the NAID Center has recently completed the first ever, detailed transnational household surveys of both immigrant-sending regions in Mexico and immigrant networks in the U.S. In coordination with a network of universities in Mexico, the NAID Center has undertaking a detailed research project over the last few years focused on selected transnational communities between California and Mexico. This is a comparative database that will allow for the analysis of different types of villages and migration

networks that were specially selected for this study. The database included village/networks with and without U.S. based hometown association (HTAs) as well as villages with and without productive projects. The villages with productive projects include those that are being supported by the MIF/IADB grant to the FPC and the NAID Center, allow for a base line analysis and evaluation of the impact of this policy approach.

This research report seeks to contribute to the theoretical understanding of the relationship between economic development and the free mobility of goods and factors (including investment capital, migration and remittances). Most theoretical work in economics has focused on goods and capital mobility, with much less attention to migration and remittances. To the extent that migration has been analyzed, it is seen as a mechanism for transferring resources into higher wage regions, further impoverishing low wage migrant sending regions (Lewis, Harris, Todaro, Krugman). Most classical and neoclassical economic theorists saw Southern out-migration as a resource drain that nevertheless helped resolve under-employment pressures, while Northern immigration was seen as potential source of productive labor that could also depress some wages in the North. Migration policy was mostly focused on Northern labor market regulatory goals.

New research perspectives have focused attention on how migration and associated remittance flows can also be used to improve development prospects, with the New Economics of Labor Migration (NELM) suggest more potential benefits from migration and remittances in the South, and the New Transnationalism suggesting important benefits on both sides of the border.

The New Economics of Labor Migration (NELM) literature, by contrast, notes that migration can also provide benefits to migrant sending regions, primarily through remittances. That theoretical circle, however, has yet to be closed since the NELM literature currently tells us very little about the net impact of migration and remittances on development gaps between migrant sending and receiving regions.

The New Transnationalism literature is emerging to complete the theoretical gaps left open by the NELM. This new perspective is based on the recognition of the need to understand the relationship between trade liberalization, the supply and demand for labor migration, and the net effect on North-South development once leveraged remittances are factored into the general equilibrium relationship. Particularly important are the relative multiplier and eternality effects from migration and remittances flows as compared to trade and capital flow liberalization? The New Transnationalism is also very focused on how can policy reforms in all three areas (goods, capital and migration/remittance flows) be made to work together for optimization poverty reduction, productivity and upward convergence of income and productivity levels. Our micro and macro transnational modeling approach will provide valuable theoretical and empirical insight into these dynamics.

From a policy perspective, this research is potentially valuable in a number of respects. First, it provides the analytical basis to place the issues of migration and remittance reform on a high profile footing along with trade and investments liberalization with respect to income convergence and poverty reduction. Second, it provides empirically based micro information of the potential impacts of different scenarios with respect to the use of remittances in the migrant village and U.S. networks. Third, this research provides insights on the impact of various initiatives by governments and international financial institutions to influence and leverage the use of remittances in migrant-sending regions. In particular, our research is based on various village level examples of investments in productive projects and micro banking strategies supported by the IDB and other development financing institutions. As such it provides an important base-line to begin evaluation the impact of both the MIF/IADB led strategies, as well as those being contemplated by a host of other initiatives and institution, including the U.S.-Mexico Presidential "Partnership for Prosperity", World Bank, Inter-American Foundation, USAID, and a number of private foundations and corporations.

The New Transnationalism (NT) is based, first, on a recognition that research on economic integration and development must include a theoretical framework for how the dynamics within and between developed and developing countries are complexly interrelated. Second, the NT recognized the importance of linking trade capital flows and migration into a single framework of analysis. Too often these flows are maintained separated with important dynamics lost and the inability to compare relative policy impacts in each of these areas. Third, an implicit strategic focus must be incorporated covering a variety of economic and policy agents. We must have a micro understanding of how agents (individuals, households, firms and organizations) make interrelated strategic decisions in the transnational environment, and how they interact with "endogenous policy makers".

Finally, we need a theory of the dynamics of Transnationalism over time. We build on the pioneering work of Gunner Myrdal concerning cumulative causality whereby micro strategic action within particular structured relations in an economy can usually produce macro outcomes, either positive or negative, that were unintended and are generated by path dependencies of previous sets of actions. The key analytical and policy work is to identify those essential micro strategic behaviors, and the socio-economic structures and institutions that constrain them, critically analyzing how policy interventions can transform these strategic processes, structures and institutions to generate positive path dependencies and cumulative causalities.

CGE modeling is particularly well suited for this theoretical and empirical work. Below is a theoretical schema of the operation of NCC and PCC in the OaxaCalifornia case. It will be followed by an empirical test in the OaxaCalifornia case in section 3.

2.2   Transnational Negative Cumulative Causality

Based on the current process of undocumented ("illegal") migration and cash based, non-intermediated remittances process, we identify a four stage negative cumulative causality dynamic (Figure 2.1):

(1) Low productivity agriculture in Mexican MSR (Migrant Sending Regions) results in:
  -low rates of profits, capital accumulation, and investment
  -low relative wages, and weak local markets
  -low ability to save, and to sustain financial service infrastructure
  -low political capital for the sector, augmented by powerless defined along class and race terms
  -builds out-migration oriented social capital

NCC1=> Out-migration of one of the MSR's most important resource (Human and social capital) which further reduces local productivity and political capital, increasing relative attractiveness of external migration

(2) Immigration and insertion into U.S. segmented labor market MRR (Migrant Receiving Regions) results in:
  -lower wages in segmented labor markets produces greater demand for low wage migrants
  -lower productivity in low wage segments/sectors
  -precarious legal status results in low political capital for immigrant workers
  -further reduces immigrant wages, combined with less ability to invest in their own human capital

NCC2=> Creates greater MRR demand for immigrant labor at lower prices with lower capital investment, resulting in lower US productivity; diverts use of migrant social capital towards transnational network strengthening versus local incorporation

(3) High Cost and Inefficient Remittance Intermediation and Communication from MRR

  -Remittances and communications required for maintaining transnational extended households and networks
  -Extra-Ordinary high cost for financial and telecom services by immigrants (40% of HH income)

NCC3=> Low financial intermediation results in lower MRR local multiplier effects through in lower savings, lower investment, lower technology access, lower HC investment; extroverted MRR communities tied to MSR

(4) High Cost and Inefficient Remittance Intermediation and Communication in MRR

-High cost of receiving remittances and communication due to virtually no investment in financial services and telecom infrastructure by national monopolies and
-increased extraverted dependence on remittances by migrant sending households and increasing relative depravation and costs

NCC4-Cashed base remittances due to lack of savings institutions exacerbates a "Dutch disease effect" by inflating asset, labor and goods markets, crowding out and reducing returns on investments in productive activities, diverting resource into unused land and housing-as-savings due to lack of savings institutions. Low local multiplier effects, extroverted MSR communities tied to MRR

2.3   Transnational Positive Cumulative Causality

Based on Legalization of current and future migration flows as well as a Remittance saving/investment intermediation and VOIP Communication strategy, we identify a four stage Positive Cumulative Causality dynamic (Figure 2.2):

(1) Legalization and documentation of the undocumented produces major effects in the US (MRR)

=> Increases real wages for migrant families by 15-20% (based on IRCA-SILAC data), reducing the number of working families in poverty by XX percent

=> Increases cost of low wage migrant workers via legalizing their exercising of full labor rights, thus reduces demand for wage labor via raising the "wage floor" the elimination of easily exploitable undocumented status, reducing migrant demand

=> Migrant families increase expenditures on own human capital by 100% (based on IRCA-SILAC data), increasing productivity of previously low skilled migrants

=>Decrease US per unit labor costs as wages increase are offset by productivity increases

=> Reduced security issues by documented undocumented

PCC1 =>NET Effect on US MRR is reduced number of working poor families, reduced US urban and rural inequality, reduced demand for migration, increases productivity and decreases US per unit labor costs.

(2) Facilitation of US Remittance intermediation and communication

-Legalization and documentation allows for easier opening of accounts in the US, with dramatically strong impacts on increases disposable income of migrant families (NAID Surveys) though the reduction of high cost of remittance transfers, and even more savings associated with lower fees on a wide range of financial service costs.

-Joining US credit unions allows for capturing of family HH savings available for the first time for reinvestment in local community via consumption loans, auto loans, home mortgage loans, family insurance, as well as through lending by credit unions for other lending activities to other families as well as multiplier effects of small business loans.

-Permits better access to new debit card technologies linked with accounts, providing cash-less options and greater savings opportunities for transnational family members in both the US and Mexico

-Lower cost communication available via broadband VOIP, results in increased saving opportunity for transnational migrant family HH

PCC2=+> Net Positive multiplier effects on U.S. MRR Communities

(3)   Facilitation of Mexican Remittance Intermediation in MSR

=>Support for rural financial intermediaries with new debit card technology, allowing for opening of accounts in the local communities tied to the US,

=>Strong impacts on increases disposable income of migrant families (NAID Surveys) though the reduction of high cost of remittance transfers and foreign exchange, with lower fees on a wide range of financial services

=> A real return on savings available for the first time allows for the redirecting of resources from unproductive storing using of remittances as cash, unused land and housing

=>Local financial institutions can generate very strong local production multiplier effects from investments based on capturing large amounts of remittances as savings and consumption account floats.

PCC3=+> Large Net Positive multiplier effects on Mexican MSR Communities

(4)   Empowering transnational social capital networks

(3) Transnational Regional Case Studies: The OaxaCalifornia Project

In this section we review the results of the transnational modeling from the OaxaCalifonia project where six migrant sending villages and two transnational communities were surveyed at the household level. First we explore the data illustrating a current pattern of negative cumulative causation consisting of: high levels of rural out-migration, strong dependence on external income, weak local production and weak local employment, all resulting in greater out-migration. We then explore alternative modeling scenarios that show that increased financial intermediation and investment of remittance flows through local (rural) financial markets and institutions can reverse cumulative causation from negative to positive, increasing the local multiplier effects of remittances by 5x to 10x, significantly increasing local income and production, reducing out-migration pressures.

The OaxaCalifornia Project focused on transnational linkages from a Mexican state with the highest rate of out-migration (see Oaxaca in Table 3.1) and the top US in-migrant state from Mexico, California. Six communities (Table 3.2) were chosen from one of the regions of Oaxaca with the highest rates of out-migration (Figures 3.1 and 3.2) whose primary areas of destination is the west Los Angeles communities of Venice, Santa Monica and Mar Vista (Figure 3.3). Tables 3.3 and 3.4indicates the high proportions of Zapotec indigenous language use in these Oaxaca villages, particularly Santa Ana del Valle. Table 3.5 indicates that the California households from Santa Ana del Valle also show similarly high levels of Zapoteco speaking households. Despite the huge distance, these communities in Oaxaca and California maintain strong transnational bonds that include the continuation of ancient "uso y costumbres" and "cargo" socio-political systems that are now being organized and maintained across far away borders. The OaxaCalifornia case was chosen in part because the existence of a high degrees of "transnational social capital"[14] can be seen as an intensive example of transnational ties, with both its positive and negative dynamics.

3.1 Negative Cumulative Causality: Current Village and Transnational SAMs

Current data from the transnational villages of the OaxaCalifornia project illustrate a pattern of negative cumulative causation consisting of: high levels of rural out-migration, strong dependence on external income, weak local production and weak local employment, all resulting in greater out-migration. Table 3.6 summarizes this record of continuous high levels of economic marginalization in these communities in the last 20 years, despite very high levels of out-migration and associated remittances.

Table 3.7 shows the relative high rates of population growth from the 1950's to 1970's, and then an absolute decline (municipal TCS), with Figure 3.4 illustrating the absolute decline of population with the onset of migration in the 1980s (except for the

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[14] See Hinojosa, ed. (2003) Comp project

case of Tlacolula which will be discussed below). Oaxacan age-population structures show a current emptying out of the most productive age workers, with high concentrations of young and elderly (Table 3.8 and Figure 3.5). Oaxacan-California age-population structures, on the other hand, show a high concentration of middle populations with very few elders, but also a high degree of children, mostly born in US (Figure 3.6).

Oaxacan household incomes in the sample villages are, in general, extroverted and highly dependent on remittances from California. Tables 3.9 and 3.10 display the relative sources of village income, which are mostly based on exterior versus local income. Exterior income is essentially remittance income, strongly overshadowing government income to households on the order of 2 to 1, and even 10 to 1 in some cases. Households that receive international remittances, even though they are better off in terms of total income, are even more dependent on external sources of funds. Without remittances they would not reach the per-household incomes of those without remittances.

While a common characteristic of the six localities is the strong dependency that they have with respect to the outside world, there are variations in the participation of the external income in the total income in each village, rangeing from 82% (Macuiltianguis) to 40% (Santa Ana, Table 3.10). Even though international remittances are an important component in exterior income in the six villages, international remittances weigh differently from from locality to locality: 79% for Santa Ana, 44% in Abasolo, 33% in Teitipac, 27% in Cajonos, 18% in Tlacolula and 9% in Macuiltianguis (Table 3.10). For the cases of Santa Ana, Teitipac, and Abasolo, total income per capita is greater for the households that receive remittances compared to households without remittances. Yet the opposite turns out to the case for the other three localities (Table 3.10), with Macuiltianguis, San Mateo Cajonos and Tlacolula indicating that houseolds wihtout remittances have a higher per-capita income than housholds with remittances. Even in the special case of Macuil with a successful sawmill, when we eliminate the income to households without remittances that comes from the sawmill (see note in Table 3.10); we still see that the income per capita of the households without remittances and without sawmill income is $3.855, whereas the income of the households with remittances is still only $1,325.

The finding that households with remittances have an income per capita inferior to households without remittances in the serranos villages (which does not happen in the villages of the Valley, with the exception of Tlacolula) is an issue that deserve more study. It is not surprising that the same thing occurs in Tlacolula, since the households without remittances include merchants in this important market town. An interesting result of our investigation is that in four of the six studied localities, the income of the households originating from remittances sent from the rest of Mexico is as important as the income that comes from the remittances of the migrants in the US. In effect, the weight of national remittances to total exterior income is: 55% in Teitipac, 48% in Abasolo, 53% in Cajonos and more of 72% in Tlacolula (we did not include to Macuiltianguis for the reasons above expressed, Table 3.10, row 4).

In California transnational households, we also see a high degree of activity related to remittances. Remittances represent about 15% of head of household annual yearly income (Table 3.11). This ratio is slightly higher for documented respondents compared to undocumented respondents, who also earn less than documented workers (see Transnational SAM in Appendix 1, Table A 1.2). This difference in documented to undocumented incomes helps explain why in our transnational SAM for Santa Ana, nearly three times more remittances are sent by documented families. In addition, documented families send and lend almost as much to other undocumented paisanos in the US as they send to Mexico (Appendix 1, Table A 1.2). Undocumented status makes households more dependent on wages rather than small on business income, but interestingly does not stop them from having business (mostly informal sales activities). Undocumented households also spend more money on trips to Mexico and in the home villages when they do return for visits.

. The data on the economic structure of these transnational villages not only indicates extroverted sources of income, but they also indicate a relative lack of focus on local productive activity. For the most part, the village economies are much more based on commerce and services than on local production. Local agriculture for subsistence and sale, which until recently was a major focus of productive activity in all villages, is now marginal or almost insignificant in all cases. Even in Abasolo, which is has a competitive cheese industry, commercial agricultural production represents less than 10% of total gross domestic product.

The main characteristics of the economic structure of the six studied communities are contained in Tables 3.12 (in pesos) and 3.13 (shares). A key characteristic is the fact that, in terms of monetary value, the production of basic crops (that is to say, for the auto consumption of the home) is not the more important local activity in any of the six localities (Table 3.12, first section). The case of Teitipac with about 15% is the most concentrated on auto-consumption. Another intersting characteristic is that backyard production (traspatio) is as important as basic crops, further indicating the later's decline in importance. In the villages that have artisan activity, this has become the most important economic activity (Santa Ana) or one of most important (Cajonos and Teitipac). On the other hand, the production of commercial cultivation has remained important in only one locality: the case of Abasolo. Commercial services (especailly in the case of Tlacolula) is an activity that excels in the economy of all the villages, represetning more of 50% of the value of the local production in all but one case, representing 97% in Tlacolula. The exception is Santa Ana, where commercial services are also nevertheless an important activity (representing almost 26% of local prodcution).

The importance reflected in commercial services is also indicative of a strong external dependency of localities on the national and international economy. This commercial activity consists basically of the purchase of goods produced outside the villages - manufactures produced generally in other parts of Mexico or imported. As we shall see, such dependency means that the benefits of an exogenous injection of income (for example by an increase in the value of remittances) end up "escaping" from the town originally benefitted.

Of the four components of value added in the village conomies, family labor turns out to be the most impartant in all but two cases (Tables 3.12 and 3.13 second section). Family labor accounts for between 20% of value added in Abasolo, to 78% in the case of Macuiltianguis. The wage-earning labor is the second most important factor of poduction, and is the most important component of the added value in Abasolo (70%) and Tlacolula (53%). Interestingly, the weight of land and capital in added value does not exceed 11% in any case, indicating low total factor productivity in these economies.

An additional indicator of the dependency that the villages have on the external economy of Mexico and the world is the weight of imported inputs for local production (third section of Table 3.12). Only in the case of Tlacolula is the weight of local imputs higher tahtn imported inputs. Dependence on imported inputs is particularly high in the mountain-serrano villages, with Cajonos' imported inputs reaching 43% compared to 16% for local inputs, and Macuiltianguis importing 55% of inputs compared to 6% local inputs. The high dependency that these two villages have the outside economy for imported inputs geberates a "deficit" in local GDP which is covered by the remittances that the transnational migrants send to their households.

3.2   Positive Cumulative Causality: Alternative Multiplier and CGE Scenarios

Alternative modeling scenarios, show that, despite the current negative cumulative causalities, increased financial intermediation and investment of remittance flows through local (rural) financial markets and institutions can reverse cumulative causation from negative to positive, increasing the local multiplier effects of remittances by 5x (Santa Ana) to 10x (Talcolula and Abasolo), significantly increasing local income and production, reducing out-migration pressures.

In order to demonstrate the potential dynamics of positive cumulative causalities in our sample villages, we make use of our SAM and CGE transnational modeling frameworks. A SAM not only serves to know the characteristics of the socioeconomic structure of the villages and transnational communities, they are also the database with which to elaborate multi-sectoral models for the analysis of impacts of exogenous changes. We elaborated two types of multi-sectoral models: MM, or multiplier models (that we applied to each one of the six villages and two transnational communities) and CGE or computable general equilibrium models (applied to San Juan Teitipac).

Village and transnational multi-sectoral models allows us to express through mathematical functions, the existing flows between all the components of an specified economy, as well as those flows that occur between the specific economy and its surroundings (that is to say, with the rest of Mexico and/or the U.S.). Multi-sectoral models are designed to first reproduce the original data of the SAMs according to the functional relations that are contained in the data (the so-called calibration stage of the modeling exercise). Once this calibration is completed, it will be possible to conduct alternative scenario simulations with the model, including the effects on the economic

structure of the villages and communities that could be generated by an exogenous change in particular variables. The evaluation of alternative scenarios is conducted through the comparing of the initial data (the original SAM or the data of the model that reproduces it) with the results generated by the model through the elaborated exercise of simulation (an evaluation technique known as comparative statics).

3.2.1 Multipliers Models (MM)

One simple type of multi-sectoral models is based on linear multiplier exercises applied to the base data of a SAM. The estimation of such models serve as a first approximation of the impact that diverse changes in exogenous variables can have on the economy of a town or transnational community. Such multiplier models are based on the following assumptions: idle capacity, fixed prices, linear functions of production and fixed proportions, equal average and marginal propensities to consume (implying unitary income elasticities).

The first stage for the construction of a MM is to specify which accounts of the SAM are endogenous and which are exogenous. This is essential for considering the impacts of alternative scenarios on a SAM, since in a strict sense, the modeler only has the possibility of changing the exogenous variables of the model. In general we consider the government and the "rest of the world" as the exogenous accounts of the economy of a village or community, since the actions of the agents in the village/community do not affect the decisions of the central government, the Mexican economy or the rest of the world.

The second step in operating a MM is to turn the SAM (or matrix of transactions) into a matrix of average propensities to consume. This normalization is done by dividing each element of the SAM by its respective column total. The resulting matrix is one of average participations and it is designated with letter S. In addition to the new matrix, we require an X vector that must contain the row totals of the exogenous flows. In constructing this vector, only those row totals are taken into account that correspond to the exogenous accounts of the SAM.

In the third and final step, the rows and exogenous columns of S are suppressed, through which we obtain a submatrix of endogenous participation that is denoted by A. On this basis it is possible to be defined the income of the town (or gross value of its production) as:

$$Y = AY + X$$

From this identity, the M matrix of multipliers of the town can be derived easily:

$$Y = M * X$$

$$\text{where } M = (I-A)^{-1}$$

Thus M is the matrix (square) of income multipliers of a town/community economy based on its SAM. This matrix is called thus because it contains the estimations of the direct and indirect influences that an exogenous injection of income would have on the economy of the town/community. Thus $Y = M * X$ is the basis for calculating the effects that a change in some exogenous account (X) will have in the endogenous accounts of the town (Y).

An illustration of the multipliers based on a SAM is in following Diagram 3.1. The multiplier of a town/community consists therefore in a series of rounds of multiple feedback between the sub-accounts of the SAM. Each new injection of income to the SAM hits the local subsystem of accounts later to transmit to other subsystems of the SAM, with the exception of the leakages. These leakages occur from the direct purchases of goods and services that made by village activities or households from the rest of the region, of Mexico/U.S. or the rest of world.

3.2.2   Simulations and Results of Income Multiplier Models

This reports contains an MM analysis applied to the six studied villages consists of two simulations (Table 3.14). In the first simulation we considered the effects on the village/transnational economy of an increase in the remittances sent to village households (simulation I). The second simulation consists of considering the impacts of alternative savings and investment uses of such increases in remittances: in the artisan activity of Santa Ana of the Valley, San Juan Teitipac and San Mateo Cajonos (simulation IIa); in the production of commercial agriculture of San Sebastián Abasolo (simulation IIb); in the production of basic crops of San Pablo Macuiltianguis (simulation IIc) and in the manufacturing activity of Tlacolula (simulation IId).

In both simulations (I and II), it is the wage-earning labor force that benefits most from the exogenous change. As was to be expected, the income of the households that receive remittances grows more with first simulation than with the second (4.5% as opposed to the 0.2%). The amount of the exogenous injection for each locality was the same one for both simulations: of $510,400 for Santa Ana, of $100,057 for Teitipac, $663,951 for Abasolo, $166,998 for Cajonos, $14,052 for Macuiltianguis and $233,889 for Tlacolula. We defined such amounts given the size of the village economies as well as the characteristics of its productive system and by the relative weight of international remittances. For example, the injection by $510.400 for Santa Ana represents 20% of the value of the international remittances received by local households. On the other hand, in the simulation of alternative use of such remittances, the injection $510.400 was assigned as savings available for investment in the artisan activity of the town (corresponding to 12.5% of the value of the production of this activity) which is a viable investments in the local economy (to see first section of the Table 13).

i)   Increase in the international remittances (Simulation I).

The results of an increase in the income of the households that receive remittances show that remittances currently have a positive, if moderate, multiplier effects in all the

localities. For example, the increase of the 1.86% in the GDP of Santa Ana as a result of an increase of 20% in the value of the remittances, (this means that the final multiplying effect in the income of the town is 17 times greater than the original injection. The same can be said of the multiplier effect of the injection of remittances for the rest of the localities: the GDP of Abasolo grows by 0.46% (which almost means the double of the initial injection), the GDP of Teitipac grows by 0.98%, the GDP growth of Cajonos is 1.63%, for Macuiltianguis it is 1.38% and for Tlacolula it is 0.19% (Table 3.14, first row of the section on changes in income).

With the increase in the remittances, the productive activities of all the localities also grow somewhat (Table 3.14, section on production). Commerce grows the most in four of the six villages (Santa Ana, Abasolo, Teitipac and Tlacolula). For example, in the case of Santa Ana, commerce grows by 5.4% as opposed to 4.5% growth in auto-consumption production, 3.4% growth in backyard (traspatio) production, and a null growth of the production of crafts. The results for the two mountain villages are interesting, since the production of basic agricultures grows more than commerce in Cajonos (5.2% as opposed to the 3.1%), with the same happening in Macuiltianguis for the case of activities for the familiar consumption (the production of basic agriculture grows by 1.8%, backyard-traspatio by 1.4%, whereas commerce grows only by 1.1%). This means that in these two mountain villages there are fewer leakages, which results in a greater multiplying effect of the exogenous injection.

As in the case of productive activities, factor incomes grow with the injection of remittances (section on factors, Table 3.14). As was to be expected, the income of the households that receive remittances increases much more than households that do not receive remittances. Despite this, the income of the households without remittances also grows. The results indicate that an increased income in one group of households also favors the income of all households, although less as a result of the current multiplier effects.

ii) Increase in Remittances as Savings and Investment (Simulation II)

The second simulation exercise consists of studying the possible impacts of alternative uses of the remittances. That is to say, we simulated the effects on the village economies of a hypothetical case in which international remittances are canalized to savings and investments in the productive activities of the localities and not directly to immediate consumption of households.

In general, the effects of the alternative use of the remittances are much greater than a direct infusion of remittances to household consumption. The GDP of all the villages grows considerable more with respect to the previous simulation I. The GDP for Santa Ana grows by 9.7% as opposed to 1.86%; in Teitipac, GDP expands by 3.52% as opposed to 0.98%; in Abasolo, 2.72% as opposed to 0.46%, in Cajonos, 5.98 % as opposed to 1.63%, in Macuiltianguis, 4.18% as opposed to 1.38% and in Tlacolula, 0.51% as opposed to 0.19% (Table 3.14). In addition, most productive activities grow more in this the alternative simulation II. Exceptions are Teitipac, Macuiltianguis and

Tlacolula, where some activities grow more with the first simulation (of course, the exception occurs in those sectors which are benefited directly by the simulated injection). For example, in Teitipac, the production of crops for auto-consumption grows less with the injection of investments into crafts than with respect to the injection of remittances directly into households with international remittances (1.5% and 1.7%, respectively). The same occurs with backyard-traspatio production in Macuiltianguis (0.84% as opposed to 1.43%).

As a result of the greater impact on local productive activities in the second simulation as opposed to the first, factorial income also grows more in simulation II than in simulation I. The remarkable exceptions are those of the local wage-earner in Teitipac, whose payments increase less with simulation II (2.8% as opposed to 8.2%), and those of land and capital income in Cajonos (land income grows by 3% in the second simulation and 5.2% with first, while capital income grows 3.32% and 4.56%, respectively). Despite this result, the income to family labor in Cajonos grows much more with the investment in artisan activity of the town (growing.29% as opposed to only 0.35% in the case of the first simulation).

The effects of simulation II on household incomes are very different than in simulation I. As was to be expected, the income of households that receive international remittances grow considerably in simulation I and grows less with the alternative simulation. What is interesting is that, independently of locality, the income of households that do not receive remittances grow more with the alternative simulation. This means that simulation II is more redistributive in those villages where the households without remittances are poorest (Santa Ana and Abasolo).

3.2.3 Computable General Equilibrium Model applied to San Juan Teitipac

Unlike the price assumptions of multipliers models (that is to say, fixed prices), computable general equilibrium models (CGEs) include relative prices and, consequently, the effect of their changes on the decisions of economic agents. Another difference between multiplier and general equilibrium models is that in MM we assume fixed unemployment of production factors, whereas in CGE models we suppose full employment of all productive resources. Even though the CGEs also use the SAM as their data base, in this type of models the theory of the maximizing behavior of rural households is combined with the multi-sectoral perspective of multiplier models. These characteristics of CGE models allow us to simulate the possible full "general equilibrium" impacts in rural production and income due to exogenous changes in the prices and to the variations in the value in weights of the remittances.

It can be argued that the considered effects of an exogenous injection into the multiplier models (MM) are exaggerated as compared to a CGE model. The major different has to due with the assumptions regarding idle capacity or unemployed resources. Other points out those CGE assumptions of full employment are themselves an exaggeration that can only be expected "in the long run." Conducting both MM and CGE simulations are thus useful for determining a range of potential impacts of policy

changes or other exogenous effects. We conducted both MM and CGE simulations for the case of Teitipac, carrying out the two previous simulations and an additional one, in which we simulated a devaluation of the Peso by 10%.

As is to be expected, the effects of the simulated exogenous injections of both direct remittances and remittances as investment are smaller using a CGE model with respect to MM effects for the case of Teitipac (Table 3.15, columns 2 and 3). Whereas an increase in 7% in the value of the remittances causes a village GDP increase of 0.98% in the MM simulation, the impact with the CGE model is only 0.36% (a similar smaller impact is the case in simulation II, comparing the results of Teitipac in Tables 3.14 and 3.15).

As we saw with the MM simulations, exogenous injections cause a generalized increase in the productive activity of the localities. In contrast, the same injections cause a reconstruction of the economy of the villages when using a CGE. A CGE model captures the modifications in relative prices caused by an exogenous change as well as the reaction of the productive agents in a context of full employment with respect to their use of their limited resources. Thus, the two simulated injections produce a substitution of productive activities from backyard-traspatio production to artisan production, commerce and, to a lesser extent, the production of basic agriculture (Table 3.15).

In both simulations (I and II) it is the wage-earning workers that benefit most from the exogenous changes and, as was to be expected, the income of households that receive remittances grows more with first simulation (4.5% as opposed to the 0.2%). An interesting aspect of the injection of remittances compared to an increase artisan production in the CGE results, is that an increase in the value of the remittances stimulates the emigration of the inhabitants of Teitipac to the EUA: 6.9% in simulation I with respect to the base, as opposed to only a 0.05% for the case of the second simulation.

Finally, changes in both simulations cause a strong diminution of the deficit in agriculture for the human consumption that Teitipac had with the outside world; the surplus that it had in backyard-traspatio production turned into a deficit, increasing the surplus of the artisan activity and diminishing the deficit of the commercial sector (last four rows of Table 3.15).

The third exercise consists of simulating a 10% devaluation of the peso, which is translated into an increase of the value of the weight of remittances that households receive in Teitipac from migrants in the US. The devaluation increases migration to the rest of Mexico and the US (increases in 2.3% and 2.4% respectively, with respect to the base, last column of the Table 3.15). Along with the shortage of resources that this entails, the GDP diminishes by 1.75% and wages increase by 3.23%. Also, the production of basic agricultures and craft decreases, which causes that the deficit that has Teitipac with the outside in the commerce of basic agriculture grows and the surplus in crafts decreases. The income of both types of households grows, although more for households

with international remittances (8.3% as opposed to the 3.7%), since these benefit directly with the devaluation.

Conclusions

There are the four conclusions that can be extracted from the analysis of the results of our multi-sectoral Multiplier and CGE models.

1) While remittances have multiplying effects that still benefit to the households without migrants and, therefore to the economy of the villages, the canalization of remittances for savings and productive investments in villages has a much larger multiplier effect.

2) Increases in the value of remittances, either directly into households or via a peso devaluation, can actually accelerate out-migration. Only an alternative use of the remittances (for example to the crafts or the production of commercial agriculture) could reduce the incentives to migrate by the inhabitants of the studied villages.

3) The strong external dependency on outside production causes major leakages of any exogenous injections of remittances. At the same time, this means exogenous changes in the rural sector have major impacts on the regional and national economy.

4) The macroeconomic conditions of US-Mexico relations strongly affect the economy of the rural villages and, consequently, the migration of their inhabitants.

The results that we have obtained, however, are only the beginning of an investigation to depth on the transnational economy of Oaxaca and California, including the effects of the remittances and of alternative uses of this type of income. Our next steps will be to elaborate CGE models similar to the one of Teitipac for all villages, as well as CGEize the transnational SAMS we have developed. We are also in a position to model quantitatively in the future the relations between the villages studied with the economy of Tlacolula. An additional aspect of extreme importance to make suggestions on alternative uses of the remittances is to study the way in which the inhabitants of the studied villages use their savings as part of our proposed project to build local financial institutions for savings and financial intermediation.

(4) Transnational Policy Interventions: A Framework for Praxis and Evaluation

Finally, we conclude with a framework for evaluating the impact of policy interventions in the OaxaCalifornia arena now being supported by IDB investments which seek to integrate (1) rural broadband technology, (2) community micro-banking, and (3) productive projects for regional and international markets.

In particular, we propose how to measure the results of policy interventions that seek to build synergy between rural satellite broadband, international debit card technology, and exports to relatively huge Diaspora markets for regional goods. Unleashing the potential of this synergy, however, will require transnational policy coordination that must include governments moving to broaden access to the banking/credit union system through increased documentation of the undocumented, facilitation of local social and political participation, and the general empowerment of transitional migrant networks

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Appendixes:

Appendix 1: Transnational Social Accounting Matrices

Appendix 2: OaxaCalifornia Village Social Accounting Matrices

Payment Processing and E-Commerce

ADS
CE
CEY
CKFR
EBAY, FDC, GPN
INTU, NAP, TSS

(1) Globalization, Regional Integration and Transnationalism

(2) The New Transnationalism: Theoretical and Policy Perspectives

(3) Transnational Regional Case Studies: The OaxaCalifornia Project

(4) Transnational Policy Interventions: A Framework for Praxis and Evaluation

Lindert and Williamson, 2001

Mass migration was a major factor equalizing incomes

This publication is an analysis of negotiations concerning the temporary movement of workers from developing to developed economies, taking place under the auspices of the GATS negotiations which cover the trade in commercial services. It focuses on the temporary movement of unskilled and semi-skilled workers and considers the benefits of easing the restrictions on the temporary movement of labor. The main theme underlying the paper is the mutual benefit to both developed and developing countries in permitting a temporary movement of workers in these categories. In the next 20 years developed economies will experience an increasing shortage of labor at the lower end of the labor market due to an ageing population and a more educated workforce.

The paper constructs a model to analyze the effects of easing the restrictions and its impact on the labor market in developed countries and details some proposals which developing countries should use in the Service Negotiations. This paper is particularly useful for policy-makers (in both

developed and developing countries) who are involved in formulating policy for the employment and immigration fields. It is also of interest to students and academics.

72 pp pages, 7 1/2" x 10", July 2003

Dani Rodrik '79 is Hariri professor of international political economy at the Kennedy School of Government and author of The New Global Economy and Developing Countries: Making Openness Work.

Globalization for Whom?, Harvard Magazine, page 29, July-August 2002, Volume 104, Number 6

Consider, for example, instituting a system that would allot temporary work permits to skilled and unskilled workers from poorer nations, amounting to, say, 3 percent of the rich countries' labor force. Under the scheme, these workers would be allowed to obtain employment in the rich countries for a period of three to five years, after which they would be expected to return to their home countries and be replaced by new workers. (While many workers, no doubt, will want to remain in the host countries permanently, it would be possible to achieve acceptable rates of return by building specific incentives into the scheme. For example, a portion of workers' earnings could be withheld until repatriation takes place. Or there could be penalties for home governments whose nationals failed to comply with return requirements: sending countries' quotas could be reduced in proportion to the numbers who fail to return.) A back-of-the-envelope calculation indicates that such a system would easily yield $200 billion of income annually for the citizens of developing nations—vastly more than what the existing WTO trade agenda is expected to produce. The positive spillovers that the returnees would generate for their home countries—the experience, entrepreneurship, investment, and work ethic they would bring back with them—would add considerably to these gains. What is equally important, the economic benefits would accrue directly to workers from developing nations. There would be no need for "trickle down."