Towards an integrated model of international migration

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Abstract

Demographers have yet to develop a suitable integrated model of international migration and consequently have been very poor at forecasting immigration. This paper outlines the basic elements of an integrated model and surveys recent history to suggest the key challenges to model construction. A comprehensive theory must explain the structural forces that create a supply of people prone to migrate internationally, the structural origins of labour demand in receiving countries, the motivations of those who respond to these forces by choosing to migrate internationally, the growth and structure of transnational networks that arise to support international movement, the behaviour states in response to immigrant flows, and the influence of state actions on the behaviour of migrants. Recent history suggests that a good model needs to respect the salience of markets, recognize the circularity of migrant flows, appreciate the power of feedback effects, and be alert unanticipated consequences of policy actions.

Key words: immigration, networks, neoclassical economics, new economics of labour migration, social capital, unintended consequences, policy

JEL Classification: J15, J24, J42, J48, Z13

1. Introduction

Forecasting the size and composition of a nation's population is challenging because it requires making guesses about the future course of fertility, mortality, and migration. Even if one makes reasonably accurate assumptions about future demographic behavior under static conditions, exogenous shocks can always occur to change those conditions in unpredictable ways. Natural disasters, pandemics, wars, depressions, and technological breakthroughs can radically alter the decision-making environment to affect demographic outcomes, both directly and indirectly. Owing to unexpected

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exogenous changes in the past, demographers largely failed to anticipate two of the most important population trends of the post-war period: the baby boom of the 1950s and 1960 and the abrupt increase in life expectancy of the 1970s and 1980s.

Despite past failures, fertility and mortality in developed countries now stand at very low levels and can reasonably be expected to change relatively little in the normal course of events, with mortality drifting slowly downward and fertility fluctuating within narrow limits in response to short term perturbations. Barring some massive catastrophe, future changes in mortality should not be abrupt; and although fertility has more potential for shifts over time, a return to the swelling birth cohorts of the baby boom is unlikely. The potential for natural increase in developed populations is thus quite small and some countries have already begun a process of natural decline.

As fertility and mortality have fallen and their temporal fluctuations have diminished, international migration has emerged as the most dynamic source of population change. During the 1990s immigration accounted for a third of U.S. population growth and by the end of the decade the share had reached 40%. Unfortunately for population forecasters, migration is also the hardest demographic factor to predict. Whereas people are born and die once and only once, they may move repeatedly or not at all during the time they spend in-between these two vital events. Moreover, whereas birth and death rates follow a characteristic age pattern whose contours shift in predictable ways as levels change, the age schedule of migration is malleable and not tied so closely to the overall level of population mobility.

Owing to their common grounding in human biology, mortality and fertility patterns are well represented by model schedules. Simply by picking a life expectancy and a total fertility rate, one can apply model fertility and mortality schedules to project the population forward with considerable accuracy. As long as guesses about trends in overall birth and death rates are reasonably accurate, the forecasts will be quite good. Projecting migration is trickier, however, as both the level and age pattern of mobility are sensitive to short-term fluctuations in social, economic, and policy variables. Moreover, the effect of migration occurs through the interplay of two very different kinds of behavior - entering and exiting - which may be influenced by entirely different factors in entirely different places.

As a result of these empirical peculiarities, not only did demographers fail to anticipate the upsurge in immigration to the United States after 1965, unlike the case with fertility and mortality projections, demographers did not get much better in forecasting international migration in the ensuing 40 years (Massey and Zenteno, 1999). In 1964, for example, the Census Bureau projected the U.S. population forward assuming a net annual immigration of 300,000 persons distributed according to a fixed age and sex structure. This assumption predicted

that a total of 9.3 million immigrants would arrive by 1995; but gross legal immigration over the period turned out to be 19.2 million, nearly 50% higher. Although this figure does not take into account emigration, which averaged about a third of the inflow, even discounting by 33% yields a value of 12.9 million, which is roughly 40% higher than originally projected. Moreover, official statistics only capture the legal portion of the inflow. If we very conservatively assume that net undocumented migration ran at 100,000 persons per year, then total net immigration through 1995 rises back up to 15.9 million, a 65% understatement compared with the Census Bureau's projections.

Although demographers did not realize it at the time, the assumption of 300,000 annual immigrants was already out of date when the Census Bureau established it in 1964. To be sure, the figure seemed reasonable at the time, given the history of immigration to the United States that had prevailed up to that point. Legal immigration had only exceeded 300,000 thrice over the past several decades (in 1956, 1957, and 1963), so the assumption of a net increment of 300,000 migrants seemed safe, even conservative. Unfortunately, after 1965 gross annual immigration never again fell below 325,000 and by 1967 was running at 362,000 per year. After 1965 undocumented migration also accelerated.

Government demographers eventually realized that the assumed level of net immigration was too small, so in 1967 they increased it to 400,000 per year. Within ten years, however, legal immigration had surpassed even this figure, never to return again. Despite this fact, the Census Bureau clung to an assumption of 400,000 net immigrants well into the 1980s, by which time legal immigration alone was running at around 600,000 per year. In 1984 demographers raised the assumed level to 450,000 and by 1989 to 500,000. Unfortunately, by 1989 gross legal immigration was running in excess of one million per year and net undocumented migration was estimated at around 200,000 per year.

By the early 1990s, Census Bureau demographers finally came around and raised the assumption to 880,000 net immigrants. Yet even this figure was unrealistically low: during the 1990s legal immigrants arrived at an average rate of one million per year, with another 300,000 coming in through undocumented channels. Since 2000 legal immigration has dipped to a gross average of around 950,000 per year (U.S. Department of Homeland Security, 2004) while net undocumented migration has surged to over 600,000 per year (Passel, 2005). The best estimate currently is that total net immigration to the United States easily exceeds 1.3 million persons per year.

Clearly, constantly raising the assumed level of immigration to reflect past trends has failed as a projection strategy. During a period of rapidly rising immigration, demographers have been playing a losing game of catch-up, yielding a series of adjustments that have been too little, too late. Under these

circumstances, immigration to the United States and its contribution to population growth have been consistently underestimated. The most recent evidence of this fact occurred when the results of the 2000 census showed an unexpectedly large population count (Farley, 2001), with Hispanics overtaking blacks as the nation's largest majority more than a decade earlier than demographers had anticipated (Cohn, 2003).

The failures of past immigration projections are evident, but can demographers do better? In this paper I argue that they can. Rather than making simple assumptions that set the volume and age-pattern of immigration at fixed levels, I hold that assumptions about future immigration must be dynamic and take into account the full array of forces that influence rates and age patterns migration to the United States. Forecasting international migration thus requires a sound understanding of the forces driving in- and out-migration from around the world. At a minimum, this understanding should be used to make theoretically grounded, empirically informed judgments about the future trends in international migration (as opposed to assuming fixed levels and age patterns). Ultimately, however, a comprehensive forecast requires the specification of a structural statistical model to capture the effect of different factors at different levels of analysis and how they operate to influence the ebb and flow of people across borders.

2. Elements of a comprehensive migration model

Although decisions about whether, where, and when to migrate are ultimately made by individuals, these actors are inevitably embedded within households and communities, which are themselves embedded within a social, economic, and cultural matrix that extends regionally and nationally; and nations themselves are located within global networks of trade, politics, and investment. As a result, no simple model of international migration can suffice to explicate past trends or predict future directions, and recent work has sought to integrate explanatory models across levels and disciplines (see Brettell and Hollifield, 2000).

In their comprehensive analysis of migration theories done for the International Union for the Scientific Study of Population, for example, Massey et al. (1998:50) expressed considerable skepticism "both of atomistic theories that deny the importance of structural constraints on individual decisions, and of structural theories that deny agency to individuals and families. Rather than adopting the narrow argument of theoretical exclusivity, we adopt the broader position that causal processes relevant to international migration might operate on multiple levels simultaneously, and that sorting out which of the explanations are useful is an empirical and not only a logical task."

In this paper I summarize the leading theoretical models that have been advanced to account for international migration and consider evidence on their

key propositions. Based on this review, I outline a more comprehensive approach to the modeling of international migration. I argue that any attempt to account fully for international migration must address six fundamental questions: What are the structural forces within migrant-sending societies that generate large numbers of people prone to move internationally? What are the structural forces in migrant-receiving societies that generate a persistent demand for immigrant workers? What are the motivations of the people who respond to these structural forces by moving internationally and how do these motivations determine behavior? What are the transnational social structures that arise in the course of globalization generally and international migration specifically to influence the likelihood of future movement? What determines how national governments act with respect to international migration? And finally, to what extent are governments able to realize the immigration policy goals they intend, and how do actual results differ from intended outcomes?

2.1. The structural sources of immigrant supply

There is widespread agreement that international out-migration does not stem from a lack of economic development, but from development itself (Massey, 1988; Massey and Taylor, 2004; Williamson, 2005). The poorest nations in the world do not send out the most emigrants, and within migrant-sending nations, the poorest regions and communities are not the ones producing the most migrants. Whether in Mexico or China, international migrants generally come from regions and communities that are in the throes of rapid economic development (Massey and Espinosa, 1997; Liang and Morooka, 2004). It is the structural transformation of societies brought about by the creation and expansion of markets that produces the bulk of the world's migrants, both at present and in the past, a process that is theorized in sociology under world systems theory (Portes and Walton, 1981; Sassen, 1988) and in economics by institutional development theory (North, 1990; Williamson, 1996).

The transition from a command or subsistence economy to a market system entails a profound restructuring of social institutions and cultural practices. A legal system of enforceable contracts, property rights, land titles, and courts of law must be established; a social, cultural, and economic infrastructure sufficient to sustain market transactions must be created; and a physical infrastructure of transportation and communication must be built to enable and coordinate the movement of labor, capital, goods, and services between zones of supply and demand. In the course of these transformations, people are displaced in large numbers from traditional livelihoods in subsistence farming (as peasant agriculture gives way to commercialized farming) or state enterprises (as state enterprises are privatized in former command economies). The people so displaced constitute the leading source of international migrants, both now and in the past (Hatton and Williamson, 1998; Massey et al., 1998).

2.2. The structural sources of immigrant demand

Despite pressure in sending societies, few migrants would come to the United States were there no demand for their services. Relatively few of those admitted as legal U.S. residents enter as refugees or asylees (just 7.5% in 2004) and the number of applications for such statuses has declined sharply in recent years, going from 156,000 in 1996 to just 43,000 in 2003 (U.S. Department of Homeland Security 2004). Because undocumented migrants are ineligible for transfer payments, they have no way of supporting themselves without working. As a result, they are even more unlikely than legal immigrants to remain to the United States without a job; and since 1996 the access even of legal immigrants to transfer payments has been significantly curtailed, giving them new incentives to leave when work is scarce (Fix and Zimmerman, 2004).

The vast majority of migrants of working age go into the labor force upon arrival. Among male immigrants legally admitted to the United States in 1996, 85% of those with prior undocumented experience got a job within twelve months of arrival and two-thirds of those without illegal experience did so (Jasso et al., 2000). During the late 1990s, labor demand in the United States was such that the head of the Immigration and Naturalization Service suspended work site inspections and announced the cessation of all internal enforcement (Billings, 1999). Over the past three decades, the United States has evinced a remarkably strong and steady demand for immigrant workers irrespective of the business cycle.

This strong and persistent demand is rooted in the segmented nature of labor markets within advanced post-industrial economies. Dual labor market theory (Piore, 1979) explains this persistent demand in terms of the hierarchical structure of socially-embedded labor markets, which creates motivational problems at the bottom of the bottom of the occupational pyramid (where people are unwilling to work hard or remain long in low status jobs) and structural inflation (because raising wages at the bottom generates upward pressures on wages throughout the job hierarchy). Market segmentation also stems from the basic duality of labor as a variable factor and capital as a fixed factor of production, which yields a capital-intensive sector to satisfy constant demand and a labor-intensive sector to handle secular fluctuations. Enclave theory (Portes and Bach, 1985) elaborates on segmented labor markets by pointing out that ethnic communities also generate their own demand for immigrants and may, under appropriate circumstances, become vertically integrated in ways that generate a long-term demand for immigrant workers.

The structural segmentation of U.S. labor markets has been demonstrated empirically (Dickens and Lang, 1985; Bulow and Summers, 1986; Heckman and Hotz, 1986). This segmentation yields an ongoing demand for unskilled workers willing to work hard at unpleasant, demeaning jobs with few prospects for economic mobility, people who see the work as a short-term means of raising

cash rather than as a career or an identity-determining occupational status. In the past this demand was met by teenagers, women working as supplemental earners before and after childbearing, and rural-urban migrants, but the demography of advanced societies has eliminated these sources, causing employers to turn increasingly to immigrants (Massey et al. 1998). If immigrants are not already entering the country in sufficient numbers, employers jump-start new streams through deliberate labor recruitment, either privately or through government agents acting on their behalf (Piore, 1979).

2.3. The motivations for migration

The social organization of today's global economy is thus characterized by the expansion of markets into former command and subsistence economies and the ongoing segmentation of labor markets in advanced industrial economies, yielding a large supply of potential migrants in the former and rising demand for their services in the latter. Those who move in response to these powerful macro-level forces are not passive actors, however, but active agents seeking to achieve specific goals through transnational movement. Any comprehensive model of international migration must theorize the aspirations of those who respond to macro-level transformations by moving internationally. If one seeks to shape the behavior of migrants through policy interventions, it is critical to understand the reasons why people migrate.

The best-known model of migrant decision-making, neoclassical economics, argues that people move to maximize lifetime earnings (Todaro and Maruszko, 1986). Individuals consider the money they can expect to earn locally and compare it to what they anticipate earning at various destinations, both domestic and international. Then they project future income streams at different locations over the remainder of their working lives subject to some time-sensitive discount factor and then subtract out the expected costs of migration to different destinations, yielding a mental estimate of net lifetime earnings.

In theory, people go to the location which offers the highest lifetime returns for their labor, so that in the aggregate labor flows from low- to high-wage areas. The departure of workers from the former constricts the supply of labor to raise wages at home while the arrival of workers in the latter increases the supply of labor to lower wages abroad. The flow continues until, at equilibrium, wage differentials disappear except for a residual reflecting the costs of movement, both financial and psychological (Todaro, 1976). According to neoclassical theory, immigrants therefore aspire to permanent settlement and will continue arriving until wage differentials effectively disappear.

The maximization of lifetime earnings is not the only potential motivation for international migration, however, and an alternative theoretical model—known as the new economics of labor migration—has been derived to explain

transnational movement. NELM argues that international migration offers a means by which people of modest means can overcome missing or failed markets for capital, credit, and insurance (Stark 1991), conditions that are common in societies undergoing economic development (Massey et al 1998). In contrast to permanent settlement abroad, NELM predicts circular movement and the repatriation of earnings in the form of remittances or savings. Rather than moving abroad permanently to maximize lifetime earnings, people move abroad temporarily to diversify household incomes or accumulate cash, seeking to solve specific economic problems at home in preparation for an eventual return.

In the developing world, labor markets are volatile and characterized by oscillations that render them periodically unable to absorb fully the streams of workers constantly being displaced from pre-market and non-market sectors. Lacking unemployment insurance, as is typical in the developing world, households self-insure by sending members to geographically distinct labor markets. In this way, the household diversifies its labor portfolio to reduce risks to income in the same way that investors diversify stock portfolios to reduce risks to wealth. If a rural Mexican household sends an older son to work in Mexico City and a father to work in Los Angeles, then if crops fail or agricultural wages plunge at home, the family can rely on income originating in other locations unaffected by local conditions.

Another failure common to developing countries is missing or incomplete markets for capital and consumer credit. Families seeking to engage in new forms of agriculture or looking to establish new business enterprises need money to purchase inputs and begin production, and the shift to a market economy creates new consumer demands for costly items such as housing, automobiles, and appliances. Financing such production and consumption requires cash, but weak and poorly developed banking systems typically cannot meet new demands for capital and credit, giving households in developing nations yet another motivation for international labor migration. By sending a family member temporarily abroad for wage labor, a household can accumulate savings to self-finance investments in production and the acquisition of large-ticket consumer items.

2.4. The emergence of transnational structures

A global economy wherein goods, capital, service, information, commodities, and raw materials flow relatively freely across international borders relies on an underlying infrastructure of transportation, communication, and governance to connect trading nations with one another and maintain international security (Massey et al., 1998). As trade between two countries expands, so do the various infrastructures that facilitate it, thereby reducing transaction costs along specific international pathways. However, reducing the costs of moving goods, services, and products also reduces costs for the

migration of people. As a result, nations that engage in trade also tend to exchange people. Those possessing human capital flow into developing nations while those bearing labor flow in to developed countries (Massey and Taylor, 2004). As of 2004, around one million Americans resided in Mexico and roughly 10 million Mexicans lived in the United States.

Once migration begins, however, a new social infrastructure arises that is under the control of the migrants themselves, and this development builds a powerful momentum into migration that yields a self-perpetuating process known as cumulative causation (Myrdal, 1957; Massey, 1990). The first migrants who leave for a new destination have no social ties to draw upon, and for them migration is costly, especially if it involves entering another country without documents. For this reason, the first international migrants usually are not from the bottom of the socioeconomic hierarchy, but from the middle ranges (Portes, 1979; Massey, Goldring and Durand, 1994). After the first migrants have left, however, the costs of migration are substantially lower for their friends and relatives who still live in the community of origin. Because of the nature of kinship and friendship structures, each new migrant creates a set of people with social ties to the destination area. Migrants are inevitably linked to non-migrants through networks of reciprocal obligations based on shared understandings of kinship and friendship. Non-migrants draw upon these obligations to gain access to employment, housing, and other forms of assistance at the point of destination, substantially reducing their costs.

Once the number of network connections in an origin area reaches a critical level, migration becomes self-perpetuating because migration itself creates the social structure necessary to sustain it. Every new migrant reduces the cost of subsequent migration for a set of friends and relatives, and with the lowered costs, some of these people are induced to migrate, which further expands the set of people with ties abroad, and, in turn, reduces costs for a new set of people, causing some of them to migrate, and so on. Recent empirical studies in Mexico strongly support this scenario, showing that access to network connections substantially raises the likelihood of migration to the United States (Massey and García España, 1987; Palloni et al., 2001; Munshi, 2003), and patterns appear to be quite similar elsewhere in Latin America (Massey and Aysa, 2005).

Eventually, of course, communities reach a point of network saturation, where virtually all households have a close connection to someone with migrant experience. When networks reach this level of development, the costs of migration stop falling with each new entrant and the process of migration loses its dynamism (Massey and Zenteno, 1999). At the same time, the rate of out-movement ultimately reaches a stage where labor shortages begin to occur and local wages rise (Gregory, 1986). These developments act to dampen the

pressures for additional migration, and cause the rate of entry into the migrant workforce to decelerate and then fall off (Massey et al., 1994).

2.5. The behavior of states

In the absence of governmental actions, the size and composition of international migratory flows would be determined solely by the foregoing factors - structural factors at origin and destination, the strategic behavior of migrants acting on particular motivations, and the emergence of transnational structures to mediate the flows - but in the present day all nations seek to influence the number and characteristics of foreign arrivals. State policies thus act as a filter affecting how the various macro-level forces and micro-level motivations are expressed in practice to yield concrete populations of immigrants with specific characteristics. A full statistical treatment of international migration thus needs to model the behavior of states as they evolve in response to domestic and international conditions.

State policies affecting immigration are the outcome of a political process in which competing interests interact within bureaucratic, legislative, judicial, and public arenas to develop and implement policies that influence flow and characteristics of immigrants. Recent theoretical and empirical research yields several conclusions about the determinants of immigration policy in migrant-receiving societies (Massey, 1999). First, even though doubt remains about precisely which economic conditions are most relevant, it is clear that a country's macroeconomic health plays a key role in shaping immigration policy. Periods of economic distress are associated with moves toward restriction, whereas economic booms are associated with expansive policies (Lowell et al., 1986; Shughart et al., 1986; Foreman-Peck, 1992; Goldin, 1994; Timmer and Williamson, 1998).

In addition, immigration policy is sensitive to the volume of international migration itself, with large inflows generally leading to more restrictive policies (Timmer and Williamson, 1998; Meyers, 2004). Immigration policy is also associated with broader ideological currents in society, tending toward restriction during periods of social conformity and conservatism and toward expansion during periods of principled support for open trade as well as geopolitical conflict along ideological lines (Meyers, 2004). During the Cold War, policy makers in capitalist nations accepted large numbers of refugees from communist societies on generous terms, and advocates of free trade push for the opening of borders with respect to workers as well as capital, commodities, and goods. On the whole, these conclusions suggest that developed countries will move toward more restrictionist policies, even as they act to lower barriers to movement among themselves.

Meyers (2004) divides receiving-country immigration policies into three basic categories: those affecting labor migrants, those affecting refugees, and

those affecting permanent settlers (who may include former labor migrants and refugees). Labor migration policies are generally determined bureaucratically by economic interest groups (employers and workers) who interact with public officials outside the public eye, yielding a "client politics of policy formulation" (Calavita, 1992; Freeman, 1995; Joppke, 1998). Refugee policy is also formulated bureaucratically outside the public arena, yielding a slightly different client politics of negotiation between the executive branch and various social groups having political or humanitarian interests (Meyers, 2004). Policies on permanent immigration occur in public arenas where the interests of politicians, legislators, and ordinary citizens weigh more heavily against those of bureaucrats and special interests.

Citizens, albeit to varying degrees, tend to be xenophobic and hostile to immigration. Small but significant minorities also oppose immigration on ideological grounds, as part of a commitment to zero population growth or reducing strains on the environment. Most citizens, however, are poorly organized and politically apathetic, leaving immigration policies to be determined quietly by well-financed and better-organized special interests operating through bureaucratic channels. During periods of high immigration, stagnating wages, and rising inequality, however, the public becomes aroused, and politicians draw upon this arousal to mobilize voters, thus politicizing the process of immigration policy formulation and moving it from client politics to public politics. This scenario clearly occurred in the United States during the period 1986-1996 as successive pieces of immigration legislation made it more difficult for Latin Americans to qualify for legal residence and dramatically increased resources for border enforcement.

2.6. The efficacy of restriction

In general, the likely thrust of government policies toward immigration is fairly clear - in the absence of compelling ideological reasons to accept large numbers of immigrants, democratic governments move toward restriction during periods of high immigration, high inequality, and rising economic uncertainty. These conditions prevail now and in the foreseeable future in the United States. While the intended goals of state policies may be clear, however, a central question concerns the ability of states to achieve the goals they intend. Although states may attempt to regulate immigration, it is by no means assured that this goal will be achieved in practice. Desired outcomes may be partially accomplished or achieved not at all, and it is even possible that state interventions produce results precisely opposite those intended by policy makers.

Evidence of the gap between policy intentions and actual results is the fact that in recent years virtually all developed countries have come to accept a large (although varying) number of "unwanted" immigrants (Joppke, 1998). Even

though most countries have enacted formal policies to prevent the entry and settlement of immigrants, liberal democratic states have found their enforcement of restrictions constrained by several important factors (Cornelius, Martin and Hollifield, 1994). First is the global economy itself, which lies beyond the reach of individual national governments but which generates unleashes powerful social and economic forces that promote large-scale international population movements (Sassen, 1996, 1998). Second is the internal constitutional order of liberal democracies, reinforced by the emergence of a universal human rights regime that protects the rights of immigrants and makes it difficult for political actors to assuage the restrictionist preferences of citizens (Hollifield, 1992; Cornelius, Martin and Hollifield, 1994; Freeman, 1992, 1995; Jacobson, 1997). A third constraint is the existence of an independent judiciary that is shielded from the political pressures to which elected politicians must respond, thus allowing immigrants in liberal democracies to turn to courts to combat restrictive policies implemented by the legislative and executive branches (Joppke,1998).

The efficacy of restrictive immigration policies thus varies substantially depending on five basic factors: the relative power and autonomy of the state bureaucracy; the relative number of people seeking to immigrate; the degree to which political rights of citizens and non-citizens are constitutionally guaranteed; the relative independence of the judiciary; and the existence and strength of an indigenous tradition of immigration. The interplay of these five factors produces a continuum of state capacity to implement restrictive immigration policies, as illustrated in Table 1 (adapted from Massey, 1999).

At one extreme are centralized authoritarian governments that lack an independent judiciary and a well-established regime of constitutional protection, and which have no tradition of immigration, such as the oil-exporting countries of the Persian Gulf. Saudi Arabia and Kuwait, for example, are homogenous Islamic societies led by hereditary monarchs who preside over centralized, authoritarian states. Officials in the Gulf states are thus in a strong position to enforce restrictive immigration policies, and laws and regulations governing migration within the region are much harsher than those prevailing in Europe or North America (Halliday, 1984; Dib, 1988; Sell, 1988; Abella, 1992).

Next on the continuum of state capacity to restrict immigration are democratic states in Western Europe and East Asia with strong, centralized bureaucracies, but with moderate demand for entry and little native tradition of immigration. Political elites in these countries can expect to meet with some success in restricting immigration, but, as described above, immigrants have important resources---moral, political, and legal---to forestall state actions and evade legal restrictions on entry and settlement. Next on the scale of state capacity are the nations of Southern Europe and South Asia, which likewise lack strong traditions of immigration but which also lack strong centralized bureaucracies capable of efficiently imposing their will throughout society.

Immigrants to Spain, Italy, Greece, Thailand, or Malaysia thus have considerably more leeway to overcome barriers, and the states have less capacity to enforce restrictive immigration policies and bureaucratic procedures.

Table 1.   Conceptual classification of factors affecting state capacity to implement restrictive immigration policies.

	Strength of Bureaucracy	Demand for Entry	Strength of Constitutional Protections	Independence of Judiciary	Tradition of Immigration	Continuum of State Capacity
Relationship to State Capacity:	Positive	Negative	Negative	Negative	Negative	
Kuwait	High	Moderate	Low	Low	Low	High
Singapore	High	Moderate	Moderate	Moderate	Low		
Britain	High	Moderate	Low	Moderate	Low		
Switzerland	High	Moderate	High	High	Low		
Germany	High	High	High	High	Low		
France	High	High	High	High	Moderate		
Argentina	Low	High	Moderate	Moderate	High		
Spain	Low	Moderate	High	High	Low		
Canada	High	High	High	High	High		
United States	Moderate	High	High	High	High	Low

Source: Massey, 1999

Finally, at the opposite end of the spectrum from the Gulf states are countries that lack a highly centralized state and that have strong traditions of individual liberty and long-standing cultures of immigration. Such countries as Canada and Australia have well-developed social and political infrastructures to support immigrants, protect their rights, and advance their interests. The most extreme case in this category is the United States, which faces an intense demand for entry and has a deeply ingrained commitment to individual rights, a long-standing history of resistance to central authority, a strong written constitution protecting individual rights, and an independent and powerful judiciary. In the United States immigration is not simply a historical fact, it is part of the national myth of peoplehood (Smith, 2003).

3. Lessons for forecasting

The foregoing discussion reveals international migration to stem from a complex array of factors and forces acting at different levels, often with complicated cross-level, longitudinal feedbacks. It is not surprising, therefore,

that immigration has proved to be far more dynamic than demographers have thus far realized in forecasting models, and that static predictions based on constant assumptions and fixed projections have badly failed to predict the course of American immigration during the last quarter of the 20th century. What does the foregoing review teach us about the nature of international migration and our ability to forecast its future course?

3.1. Respect the salience of markets

A principle lesson is the critical role played by markets in promoting and sustaining international migration throughout the world. Within developing nations, migration—both internal and international—is a by product of the structural transformation of society that occurs as markets progressively expand and penetrate into more areas of social and economic life. The growth and expansion of markets within countries is, in turn, linked to the insertion of nations within the global networks of trade, investment, and coordination that undergird the global market. As countries such as China and India join the global trading regime and shift from peasant agriculture and state-led production toward market mechanisms they can be expected to produce more, not fewer people seeking to adapt to the new realities of life in a rapidly changing market society through international wage labor. Demographers seeking to predict future levels of immigration for use in population projections would do well to pay close attention to developments within these and other developing nations as they embrace capitalism and undergo transition to the market in coming decades.

At the same time, demographers need to broaden their view to consider not just labor markets, but also those for capital, credit, and insurance. Building a well-functioning market society is not a simple task, and along the way nations are likely to experience periodic market failures and prolonged periods when large segments of the population are exposed to missing, incomplete, or inefficient markets. In the past, demographers have focused largely on international wage differentials as the driving force behind international migration, and while large international population flows generally do not occur in the absence of significant wage differentials, they are neither necessary nor sufficient for immigration to occur (Massey et al., 1998). Whereas neoclassical economics focuses on geographic disequilibria across national labor markets as the fundamental cause of migration, the new economics of labor migration pays greater attention to failures in credit, capital, and insurance markets as leading drivers.

Although some people clearly migrate in order to maximize lifetime earnings, many others move in order to overcome market failures at home. Throughout the world, the most important single target for migrant remittances and savings is the construction or acquisition of a home, suggesting that migrants may be moving as much to overcome missing mortgage and lending

markets as to maximize lifetime earnings (Massey et al., 1998). In head-to-head comparisons between hypotheses derived from neoclassical economics and NELM, the latter usually have greater explanatory power (Stark and Taylor, 1989, 1991). Massey and Espinosa (1997) found, for example, that temporal variations in real interest rates generally out-performed fluctuations in the expected earnings differential in predicting the likelihood of Mexico-U.S. migration. Ironically, those most likely to move in response to earnings differentials are those with human capital, and people with skills and education are generally welcomed as immigrants throughout the global economy (Massey and Taylor, 2004). In building structural forecasting models or judging the level of immigration to assume in static models, therefore, it is important to consider the extent and rapidity of market expansion in different nations around the world, to consider not just labor markets but those for capital, credit, and insurance, and to differentiate between the movement of people selling their labor and those moving to maximize returns on their human capital.

3.2. Recognize the circularity of migration

Even though demographers recognize that immigrants naturally come and go across international boundaries, they nonetheless tend to under-appreciate the size and importance of emigration in assessing the relative contribution of international migration to population growth. In the United States, this fixation is pronounced because it follows the American myth which glorifies immigration as a one-way passage to paradise. As Emma Lazarus put it in her celebrated poem inscribed on the base of the Statue of Liberty, "Give me your tired, your poor, your huddled masses yearning to breathe free, the wretched refuse of your teeming shore. Send these, the homeless, tempest-tossed to me, I lift my lamp beside the golden door!" This emphasis on settlement is reinforced by neoclassical economics, which views migration as a permanent move undertaken to maximize lifetime earnings rather than as a short-term strategy to accumulate savings or manage risk.

It is hardly surprising therefore, that past projection models have assumed a fixed number of net international migrants distributed according to a constant age-sex schedule, as if net migration itself were a discrete quantity affected by a coherent set of determinants. In reality, net immigration constitutes a small residual from much larger gross flows of people in and out of a country; and entries and exits typically respond to entirely different factors operating at different geographic locations. With the exception of the Irish and Jewish immigrants from the Russian Pale, international migration during the classic era between 1880 and 1920 was heavily circular and determined by fluctuating conditions in sending and receiving nations (Thomas, 1973; Wyman, 1993; Hatton and Williamson, 1998).

Migration to the United States since 1965 likewise has been heavily circular, with out-migration generally averaging about a third of in-migration (Jasso and Rozenzweig, 1982; Warren and Kraly, 1985). Indeed, two thirds of those entering the United States as "new" permanent immigrants have been in the country before in one status or another (Massey and Malone, 2003; Redstone and Massey, 2004). Rather than assuming a single value for net international migration, therefore, demographers would be on safer ground if they were to make separate assumptions about levels and patterns of in- and out-migration for purposes of population projection. Likewise, in specifying forecasting equations they would do well to model the two flows separately as functions of distinct sets of determinants.

The case of the United States is particular instructive here. Projections during the 1990s failed not so much because the level of in-migration had changed, but because the rate of out-migration fell precipitously to record low levels, something that Census Bureau demographers failed to notice because they were not looking in the right place (Massey, Durand and Malone, 2002; Massey, 2005). Not only is the separate consideration of in- and -out-migration mandated empirically, it is warranted theoretically under the New Economics of Labor Migration which explicitly posits return migration (Massey et al., 1998).

Although net international migration may be dominated by the entry and exit of foreigners, the crossing of international borders is not limited to immigrants, and in today's global market natives also contribute to net gains and losses of population through international movement. Some 4.2 million U.S. citizens lived abroad at the time of the last census (U.S. Department of State, 2002) and although this constitutes a small number compared with the 31.1 million foreigners in the United States, changes in the propensity of Americans to live abroad may influence projections more significantly in years to come as both retirement and business emigration expand.

3.3. Appreciate the power of feedbacks

Another reason that Census Bureau projections failed so badly in predicting the volume of immigration during the 1980s and 1990s is that they did not take account of the powerful endogeneity built into immigration processes by social networks. Known variously as the "auspices" of migration (Tilly and Brown, 1967), the "family and friends effect" (Levy and Wadyckia, 1973), "chain migration" (MacDonald and MacDonald, 1974), and "migration capital" (Taylor, 1986), network ties lend migration a strong internal momentum. When someone without prior migration experience has a social tie to someone with current or past experience as an international migrant, his or her odds of moving internationally are dramatically higher compared with those who lack such ties (Massey et al., 1998). This basic empirical fact creates a powerful feedback loop between the past migratory behavior of people within a social

network and the future migratory behavior of non-migrants who share the same network, yielding a feedback process known as cumulative causation (Massey, 1990).

The principal lesson for demographers is that the more immigrants from a particular origin there are in a receiving country at present, the more can be expected to come in the future, up to asymptotic limits set by the logistic curve. Massey and Zenteno (1999) showed that building feedbacks through migrant networks into models projecting Mexican immigration to the United States increased the expected number of immigrants over static projections by 85% in the course of five decades, yielding a far more accurate forecast of future population size. Hatton and Williamson (1994, 1998) found that network effects dominated in statistical models predicting emigration from Europe during the classic era, especially during the phase of rapid expansion shortly after the initiation of mass movement.

3.4. Don't be surprised at unintended consequences

Although governmental policies may influence fertility and mortality at the margins, the effects are diffuse, indirect, gradual, and quite modest overall. Vigorous pronatalist policies to encourage childbearing in some European countries have met with limited success (Morgan, 2003) and heavy investments in biomedical research and health care have yielded gradual rather than quantum increases in life expectancy in recent period? (Wachter and Finch, 1997). In contrast, changes in immigration policy since 1965 have produced a series of sharp discontinuities in the volume and composition of immigration to the United States, usually in unexpected and often in unintended directions (Massey, Durand and Malone, 2002).

As already mentioned, immigration policies are generally developed in response to domestic politics and are grounded more in ideology or expediency than in any realistic appreciation of international migration as a social and economic process. As a result, state interventions to placate domestic political interests or satisfy specific constituents have frequently produced unanticipated effects that have worked as much to expand as to limit the flow of immigrants into the United States.

The contemporary era of international migration is commonly dated from the passage of the 1965 amendments to the Immigration and Nationality Act, which established a new "preference" system for allocating visas to prospective immigrants on the basis of kinship to U.S. residents and to a lesser extent, on the basis of domestic employment needs. By far, the largest number of immigrant visas was reserved for direct relatives of U.S. citizens and resident aliens. A much smaller share was set aside for needed workers. In 2004, for example, two thirds of all resident visas went to the relatives of people already present in the

United States, compared with 16% granted on the basis of employment (U.S. Department of Homeland Security, 2005).

The preference system was created to eradicate discrimination on the basis of national origin and was thought at the time to have few implications for the long-term expansion of immigration. But the allocation of visas to the relatives of citizens and resident aliens—most of them former immigrants themselves—inadvertently ended up reinforcing if not institutionalizing the process of network migration to build a strong momentum into U.S. immigration (Massey and Phillips, 1999). Each time an immigrant receives a green card, it creates new entitlements for entry by that person's relatives, and if the new immigrant eventually goes on to become a citizen, the set of people eligible for entry expands even further (Jasso and Rosenzweig, 1988; Massey, Durand and Malone, 2002).

Thus because legislators in 1965 did not understand the role played by migrant networks in dynamizing international migration, a provision that was intended to rectify past discrimination ended up reinforcing one of the principal feedback loops by which immigration perpetuates itself over time. Likewise, in 1986 the members of congress sought to prevent undocumented migration by increasing the resources and personnel allocated to border enforcement, launching what would prove to be a two-decade long militarization of the Mexico-U.S. border. Since 1986, the number of Border Patrol Officers has tripled and the agency's budget has grown tenfold (Durand and Massey, 2003).

This enforcement strategy assumed that immigration was a one-way street and that few immigrants left the country once they secured entry. Congressional representatives were unfamiliar with the new economics of labor migration, which argued that labor migration is motivated by a desire to solve economic problems at home and return. Mexican migration historically had been highly circular, especially among those without documents (Reichert and Massey, 1979). Massey and Singer (1995) estimate that between 1965 and 1985, 85% of undocumented entries were offset by departures, and even many "permanent" legal residents come and go seasonally across the border without settling (Durand and Massey, 1992).

Legislators were also unfamiliar with the experience of European nations, which after 1973 ended foreign labor recruitment and attempted to close their borders. Although the number of guest workers fell, their place was taken by a growing number of spouses and dependents and what had been circular flow of male labor became a settled population of families, as male workers dug in their heels and refused to leave for fear of not being able to re-enter later (Martin and Miller 1980). In the end, the rate of growth of the foreign born population accelerated in response to European attempts at border closure.

Much the same thing happened during 1986-2006 in the United States. The launching of Operation Blockade in El Paso in 1993 and Operation

Gatekeeper in San Diego in 1994 tripled both the costs of border smuggling and the risk of death (Massey, 2005). In response, undocumented migrants quite rationally took steps to minimize border crossing - not by ceasing to migrate in the first place, but by staying longer and not returning once entry had been achieved (Massey, Durand and Malone, 2002). Trip durations lengthened (Reyes, 2004) and return rates plummeted (Riosmena, 2004) while volume of in-migration remained fairly constant and the probability of apprehension actually fell. As a result, the net flow of undocumented migrants into the country accelerated rapidly. The number of undocumented migrants in the United States consequently grew at an unprecedented rate, causing Hispanics to overtake blacks as the nation's largest minority a decade before census demographers had predicted.

Although both of the above outcomes were unintended and unexpected by legislators, they could nonetheless have been anticipated by anyone familiar with recent theory and research on international migration. Indeed, the effect of recent immigration laws in reinforcing network migration and social capital accumulation had been predicted publicly in an op-ed piece based on social capital theory (Massey, 1988). Likewise, the likely effect of border enforcement in reducing rates of return migration was anticipated as early as 1982 by Reichert and Massey (1982) and its effect in lowering apprehension probabilities was clearly documented in 1998 by Singer and Massey (1998). Legislators unencumbered by a scientific understanding of immigration nonetheless chose to escalate border enforcement, dramatically increasing the contribution of immigration to U.S. population growth over the past decade.

4. Conclusions: building a better model

The foregoing discussion offers guidance to demographers in deciding which levels of immigration to assume in future projections, offering a foundation for better guesses about future trends in emigration and immigration. Ultimately, however, a proper job of forecasting migration trends requires the construction of a full-blown econometric model that connects entries to and exits from the United States to key determinants identified from theory and prior research, one that allows for feedback across time and between levels. Although building such a model is a formidable challenge, and beyond the scope of this paper, we are nonetheless in a position to specify which variables are relevant from a theoretical and substantive viewpoint.

The aggregate supply of international migrants from different nations around the world is likely to be determined by their location on a continuum of market development, pointing to economic measures of industrialization, service sector dominance, and privatization as key indicators of migratory potential. The existence of political alliances and the emergence of trade, transportation,

and communication links, in turn, predict likely destinations for these potential migrants. The most important "political" variables to include in any model predicting international migration are troop deployments and military bases (Jasso and Rosenzweig, 1990). Wherever the United States soldiers for geopolitical reasons is likely to become a source of international migrants because dependent relationships inevitably form between U.S. and local officials, and marriages are contracted between soldiers and local women.

Demand for immigrants is also connected to the ongoing segmentation of labor markets within advanced industrial societies and by the relative supply of workers from domestic sources which are in a position to fulfill the demand for workers in the secondary sector. Sociologists have developed several classification schemes that potentially can be applied to U.S. occupational distributions to measure the degree of segmentation on a year-to-year basis (Tolbert, Horan and Beck, 1980). The potential supply of workers can be measured as the relative number of women aged 25-65 who are not already in the labor force and the relative number of youths aged 15-20 who are neither in school nor at work.

The people who respond to these structural forces by becoming international migrants are likely to be motivated by diverse goals. Those seeking to maximize lifetime earnings pay attention to relative wages in the United States and other destination areas, suggesting the necessary inclusion of wage differentials in models of international migration. Those seeking to overcome failures in the capital, credit, and insurance markets, however, are more affected by the relative number of banks, prevailing interest rates, and insurance coverage. Recent theory and research suggest it is essential to include measures of more economic variables than simple wage rates or differentials.

Finally, it is imperative not only to model the influence of migrant networks but to capture their feedback effects over time. The ideal measure for such purposes would be the relative number of people of a given national origin who have migratory experience within the country of origin, but data on the distribution of foreign experience within specific national populations generally does not exist, and the most common proxy has been the relative number of migrants from a country who have already settled at the place of destination (Dunlevy and Gemery, 1977; Walker and Hannan, 1989). Thus a strong predictor of the rate of entry from a particular country is the relative number of migrants from that source who were present in the destination country at some point in the past, say five years ago. The parameterization of such lagged relationships according to a logistic function would enable forecasting models to do a better job of capturing the dynamic effects of migrant networks in promoting future immigration based on past experience (Massey and Zenteno, 1999).

At this point, the principal obstacle to the construction of a valid and accurate model of international migration is not theoretical or technical. As social scientists, we know which variables are important and how they operate to determine international population movements. We also have the statistical tools necessary to estimate complex effects and interrelationships that are dynamic over time and across analytic levels. What we lack at this point is a body of data that is adequate to the task. Information on immigrants to the United States is limited to that contained on the visa application and since 1957 the nation has kept no statistics whatsoever on emigrants or emigration (Levine, Hill, and Singer, 1985). The first order of business in building better models of international migration is therefore to improve the federal government's data gathering and tabulation capacities. At this point it is hard enough just to model past inflows to the United States, much less project them into the future.

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