

Unclassified

DEV/DOC(2006)03



Organisation de Coopération et de Développement Economiques
Organisation for Economic Co-operation and Development

22-Jun-2006

English text only

DEVELOPMENT CENTRE

DEV/DOC(2006)03
Unclassified

WORKING PAPER No. 249
MIGRATION POLICY AND ITS INTERACTIONS WITH AID, TRADE AND FOREIGN DIRECT
INVESTMENT POLICIES

A BACKGROUND PAPER

By Theodora Xenogiani

JT03211201

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ACKNOWLEDGEMENTS

The author would like to thank Jean-Christophe Dumont, Jeff Dayton-Johnson and Louka Katseli for their comments and suggestions on earlier drafts of this paper. All remaining errors and omissions are, of course, the author's sole responsibility. The OECD Development Centre gratefully acknowledges the financial support of the French authorities for this work.

PREFACE

Meeting international commitments to development co-operation such as the Millennium Development Goals, the Monterrey Consensus on financing for development and the Gleneagles G8 summit agreements to increase aid by around \$50 billion per year by 2010 will require not only increased resources, but also their judicious use. In this context policymakers and others cannot limit their attention to the effectiveness of foreign aid alone; they must broaden the discussion to include the development-related impacts of a spectrum of rich-country policies, including those related to investment, trade, and international migration. Such policies can work at cross purposes on the ground in developing countries, thwarting poverty reduction and hindering economic growth. Yet in most cases the policy impacts have been studied separately or independently. The OECD Development Centre's Policy Coherence activities address this knowledge gap by conducting well defined country case studies of the interaction of rich-country policies in poor countries (including their interdependence with local policies), in close collaboration with researchers and institutions in developing countries. To further that end, the Centre has asked leading experts to take stock of what is known about the impact of four key vectors of OECD-member policies — those governing official development assistance (ODA), foreign direct investment (FDI), migration and trade — on development in poor and emerging economies. These four background papers, all of which will shortly be available publicly, provide a key input into the Centre's Policy Coherence project. This paper is one of them.

OECD-member policies do sometimes work at cross purposes in their development impact. For example, restrictions on developing-country exports under the recently terminated Multifibre Agreement (MFA) cost those exporters an estimated \$50 billion annually, very roughly equal to annual foreign-aid flows to developing countries during the same period. Clearly this shows incoherence between trade and aid policies insofar as one objective of policy making is to promote economic development. The growing number of African doctors in some OECD members suggests another example. It reveals incoherence between foreign-aid policies, which seek to increase the supply of health services in poor countries and in many cases pay to train doctors, and migration policies, which selectively seek out doctors and provide powerful incentives for them to leave their home countries. Of course, OECD-member trade and migration policies have objectives other than promoting development in poorer countries, and citizens and policy makers may decide that in some cases those other objectives are more important than development. Yet at the very least, this project seeks to make more explicit the magnitude of the trade-offs among policies. What, in short, is the cost of policy *incoherence*?

In addition to identifying cases where rich-country policies work at cross purposes, a cross-cutting issue is whether policies are complements or substitutes. Policies to promote ODA

and FDI, for example, are complementary if aid flows to a country (to finance port infrastructure, say) increase the attractiveness of that country as a destination for capital flows. Policies are substitutes if the effects of diminished flows from one policy can be offset by increased flows from a second. Many observers wonder whether the considerable remittance flows sent home by migrants might substitute for foreign aid flows, reducing poverty and financing investment. Of course, the complementarity of FDI and ODA or the substitutability of remittances and aid are at this point merely hypotheses. The project aims to study such interactions more carefully; this paper provides one input.

Prof. Louka T. Katseli
Director
OECD Development Centre
June 2006

RÉSUMÉ

Les migrations peuvent, dans certaines conditions, être source de gains importants pour les pays d'origine des migrants. Ces bénéfices peuvent être sous forme de croissance économique, de réduction de la pauvreté, d'assurance contre le risque et d'accumulation de capital humain. De surcroît, les migrations peuvent interagir de manière diverse et plus ou moins complexe avec d'autres déterminants politiques tels que le commerce, l'investissement ou encore l'Aide publique au développement, et ils peuvent alors avoir divers effets conjugués sur le développement.

Ce document explore la littérature sur l'impact des migrations sur le développement. Il identifie également les principales problématiques méthodologiques liées au traitement des données, à leur accessibilité et aux techniques économétriques. En outre, l'ouvrage étudie l'impact conjugué des migrations, du commerce, de l'investissement et de l'APD sur le développement, et évalue leur degré de substituabilité et/ou de complémentarité. Il met ainsi en exergue l'extrême hétérogénéité des résultats pour tous les pays et toutes les régions du monde, mais également à travers le temps. Le document tire enfin les leçons importantes de ce fonds de littérature.

SUMMARY

It is recognised that migration can, under certain conditions, generate important net gains for the migrants' home countries. These gains may be in terms of growth, poverty reduction, insurance against risk and accumulation of human capital. Moreover migration may interact in various and complex ways with other policy vectors such as trade, investment and development assistance and they may have various joint impacts on development.

This paper reviews the literature on the impact of migration on development. It also identifies the major methodological issues in terms of data use, data availability and econometric techniques. Moreover it investigates the joint development impact of migration, trade, investment and development assistance and assesses the degree of substitutability and/or complementarity among them. It shows that there is a great degree of heterogeneity of outcomes across countries and regions of the world and across time. The paper concludes by drawing some main lessons from the literature.

I. INTRODUCTION

Research on international migration from poor to rich countries has focused for decades on the consequences for receiving countries, ranging from effects on local labour markets to issues of integration. More recently, analysts have turned their attention to the positive and negative economic impact of migration on sending countries. These effects can touch on income and growth (through remittances and lost labour), investment and consumption, the brain drain (or brain gain) or trade-related outcomes. Lucas (2004) contains a thorough discussion on these effects of migration.

A better awareness of the benefits and costs of international migration for sending countries could raise the probability that judicious policy-making there and in receiving countries can maximise the net benefits of migration. This paper reviews the enormous research literature on migration's good and bad consequences. It covers the evidence on the effects of policies on the emigration and return-migration cycle as well as the impacts on labour markets and skill formation in selected sending countries. It also seeks methodological lessons in terms of data used, econometric techniques employed and problems or difficulties frequently encountered. Moreover, in keeping with the other background papers in this series and with the objectives of the Development Centre's Coherence project as a whole, the paper asks and tries to answer key questions about migration and other economic flows as well as the policies that influence them. For example, what can the literature tell us about the interactions of foreign aid and migration? How might OECD members' migration and aid policies profitably be considered jointly in terms of their impacts on development, to insure that they complement each other rather than work at cross purposes? How do trade and foreign direct investment (FDI) flows influence migration flows, how does migration influence FDI and trade and what roles do policies play in these interactions? Table 1 shows how one policy vector may actually serve the objectives of another¹.

Given the focus of this paper on migration, the particular issue to explore in summarising the potential interconnections among the four policy vectors concerns how rich-country trade,

¹ Political-economy considerations are important for coherence or incoherence in migration policy. The country-specific characteristics and conditions of political decision making will likely have a significant impact on how migration, trade, FDI and aid policies get shaped. Nevertheless, this effect may be less important for migration policy, which has only very recently begun to be seen as a development policy tool for sending countries. For this reason, the paper does not include the political economy among the topics investigated.

FDI and aid policies influence migration from sending countries and how this interconnection affects their development. One clear conclusion in the literature stresses the heterogeneity of outcomes across countries and regions of the world and across time.

Definition and Measurement of Migration

This paper focuses on international migration, but bears in mind that internal or interregional migration can link with it in several ways. Migration from Central America to Mexico by people on the way to the United States provides a good example. Migration has different types and forms with different impacts on the economies of source and destination countries. Migrants differ in skill levels. They may be temporary, seasonal or permanent. They leave their home countries for different reasons — for employment, for family reunification, as students or as part of the large group of political migrants, asylum seekers and refugees.

Measuring migration is difficult. UN data suggest that 125 million people (2 per cent of the world's population) live outside their countries of birth. The share of foreigners in the total populations of many OECD countries increased between 1990 and 2002, but data from OECD (2004) show fewer emigrants and asylum seekers entering major OECD countries recently, in contrast with the second half of the 1990s. This may point towards some stabilisation in these flows, although the evidence is not consistent across countries. Family reunification, temporary migrants and students continue to hold important shares of migration to the OECD area.

The intertemporal decision to migrate may be taken by individuals or households (Stark and Taylor, 1991; Taylor, 1999). Extensive investigation of the determinants of such decisions has indicated that people generally migrate if the expected benefits exceed the associated economic, social or informational costs. There is a distinction, however, between the desire to move — the propensity to migrate, defined more formally as the relation between effective migration flows and migration potential — and the reality of actual migration². There is another between migration pressure (excess labour supply in the presence of a negative per capita income differential) and the propensity to migrate (Giubilaro, 1997). Katseli (2005) argues that at the macro level one may see migration as a cycle with five distinct stages. They are the *“exit stage”* when the home region loses labour due to emigration; the *adjustment stage* associated with the ensuing decline in the home region's economic activity and living standards as its emigrants settle in the host country; the *consolidation stage* which coincides with an upturn in economic activity due to the growing inflow of migrant remittances; the *networking phase* associated with the creation of networks between transnational communities and possible family reunification; and finally the *repatriation or immigration phase* when the home region experiences a labour inflow due either to return migration or to immigration stimulated by the emergence of labour shortages in the local market³.

² Here, the stage of development of the home country and the income conditions of the specific family enter into the decision.

³ Nyberg Sorensen (2004) describes the Moroccan migration experience as a similar, four-stage process. Initially, from the 1960s until the first oil shock, individual male migration predominated. A flow of clandestine migration occurred after the early 1970s. The mid-1980s saw the start of a family reunification

This life-cycle model of migration reasonably describes the migration history of European countries — once major sources of international migrants and now significant attractors. It also fits well with the idea of migration as a self-sustained phenomenon. Tapinos (2000) suggests the lack of efficient institutions and markets in source countries as two possible explanations of this self-sustaining feature. Migration itself may also generate a dependency path that is difficult to change. In their discussion of the model, Glytsos and Katseli (2002) argue that the emigration, remittance and repatriation cycle depends on a broad series of family decisions, namely the decision to migrate and its timing, the amount of remittances sent home and the decision to return and its timing. Four different factors shape these decisions: demand pull in the destination countries, supply push combined with financial and informational costs (distance, social networks) in source countries and institutional factors and market imperfections.

cycle. Since the early 1970s remittances have become important for the balance of payments; IMF figures place Morocco as the fourth largest recipient of remittances.

II. SOME METHODOLOGICAL ISSUES

The Data

Measuring migration and remittances as well as quantifying various aspects and outcomes of migration are not easy tasks. A lack of good data complicates them. Of the two main types of data used in the literature macro data come mostly from the national accounts, the balance of payments and trade figures. The IMF's *Balance of Payments Statistics* is the main source of data on remittances for many countries, but these data reflect only money transmitted through official channels and are thus probably underestimated.

Micro data consist of household surveys, census data and specific migration surveys. Micro data have been used to investigate specific questions at the household or the individual level as well as to measure remittances sent to migrants' households. These data are rich in information on household composition, household members' characteristics and labour market activities. They often contain detailed information on income (particularly remittances received from abroad) as well as expenditures. Gubert (2002) claims that household surveys allow one to understand the importance of remittances in the total revenues of households that receive them. She estimates, for example, the proportion of migrants sending remittances and the average amount of remittances to Mali, using the declarations in household surveys of migrants' parents at home. Migration-specific surveys have been conducted in countries where migration is important⁴. Household survey data enable researchers to examine in depth issues such as household migration decisions, remittance use and labour-supply responses to migration. Macro information often complements these data for analysis of externalities and macroeconomic responses, which cannot be captured with micro data.

Household surveys do have weaknesses, especially because they are not always migration-specific. They usually contain sets of questions on migration, but, not designed to examine migration, they create specific problems often difficult to resolve. In many cases one can learn from these sources only whether a household member has migrated. They provide no further information on this person, his personal characteristics, the time of his departure, the link

⁴ Hoddinott (1994), using a rural migration survey for Western Kenya, argues that the advantage of these data relative to census data is that they actually sample the rural population and thus can better reveal migration from those regions, because census data usually under-sample the rural population. An additional advantage of a survey of a single geographical area is that the effects of broader community-level factors are removed.

to the head of household etc. Most important, these sources do not cover households whose members have all migrated abroad. Moreover, depending on the time elapsed since migrants' departure, counting them may become even more problematic. After long periods, questioned households likely will not even report migrants as household members. Given frequent changes in household composition, it is likely that migrants are often reported as members of two different households. In other words, migrants can be undercounted or double-counted.

Equally if not more problematic is the measurement of remittances in household surveys. If they seek detailed information on household income sources, remittances will very likely be included, although often without precision on when they occur. Even when household surveys ask questions about when remittances were received in specific periods (which can vary) prior to surveys, the reported data may be subject to seasonality and cyclicity problems that render them questionable.

A recent and impressive effort to compile data on migrants based on census analyses comes from the Directorate for Employment, Labour and Social Affairs (DELSA) at the OECD. DELSA combined data from country censuses to construct a rich database that counts foreign-born individuals living in the OECD member countries by country of birth and education level. Carrington and Detragiache (1999) compiled USA census and OECD migration statistics to construct a first database on skilled emigration rates. This effort to provide estimates of highly skilled emigration rates was extended by Docquier and Marfouk (2005) who collected data on the immigration structure by education levels and country of birth from most OECD countries in 1990 and 2000. CELADE (the Centre of Demography for Latin America and the Caribbean) has done similar work for its region. This database compiles more than 20 censuses for the years 1980, 1990 and 2000 to obtain information on flows and stocks of migrants across countries and regions. Aside from these examples, some data on migrant flows exist, but they are often incomplete and cover only subsets of countries (for, example the data in SOPEMI, the French acronym for "Système Officiel Permanent des Migrations" of the OECD, which count migrants living in the OECD member countries). The various sources on refugees and asylum seekers also have weaknesses. Finally, an alternative way to derive measures of net migratory flows employs demographic methods, notably comparisons of age pyramids. It could potentially give better results for small countries, although strong assumptions are often necessary.

Selection Bias

The problem of selection bias is common, but often no action is taken to approach and reduce it. Selection bias relates to migrant decision making, which has various facets: the original decision to migrate, the destination country chosen, the decision to remit funds, the return-migration decision, etc. The problem arises from observed and unobserved characteristics that make some individuals more or less likely to behave in certain ways. For example, one can observe only remittances of migrants and among them only those who choose to remit⁵. The

⁵ The same holds for return migrants' investment plans. Return migrants are not randomly selected from either the general population or migrants as a group. Some argue that return migrants are often the least

remitter migrants may not (most likely will not) be a random sample either of the origin country's population or of all that country's emigrants. Certain observable as well as unobservable characteristics make them more likely to migrate and then to remit. Haddinnott (1994) argues that migrants do not constitute a random sample of the population. He develops a theoretical model in which migrants' parents' ability to reward good behaviour through the promise of bequests may influence remittances. In that framework he deals with a double selection issue: first that of migration and second that of observed earnings of the migrants, which enter the remittances equation along with the bequest of land. Stark (1995) discusses another aspect of selection. He argues that skilled migrants remit strategically to keep potential unskilled migrants at home. They do this because potential employers do not observe migrants' productivity and thus pay them a wage equal to the average productivity of the group with which they identify them.

The selection problem must be taken into account for estimates of interest to be unbiased, using, for example, the Heckman selection correction model. The most commonly used method is a two-stage estimation procedure. In the first stage a probit model predicts the probability of selection (i.e. the probability of migration, of choosing a specific destination or of remitting). In the second stage, the inverse Mills' ratio (IMR) is included as a regressor in the equation of interest. There are two options for identification. The first is to find a variable that affects selection but does not appear in the equation of interest. The second relies on non-linearity⁶. Selection bias is discussed in several instances in the literature, and some studies employ the Heckman selection model, but identification relies in most cases on non-linearity.

Endogeneity

Endogeneity is another very common issue⁷, quite often discussed by researchers, and different attempts are made in the literature solve the problems arising from it. It may take two forms. In the first an independent variable included in the model is potentially a choice variable correlated with unobservables in the error term. In this case, the reverse of selection bias, the

successful ones, which implies that they do not constitute a very representative group of all migrants. They have specific characteristics that may have some impact on their activities when they eventually return.

⁶ In identification through non-linearity, the sets of regressors in the two stages are allowed to be the same. The IMR is a non-linear combination of the variables included in the first stage (because of the use of the probit model and based on the model's important assumption of normality) and it is precisely this non-linearity that permits identification. This method is often questionable because of the non-justification of the normality assumption, which renders the first option a more robust one.

⁷ Selection bias and endogeneity are often used interchangeably, but they are two different problems, although the solution to both consists of a two-stage technique. The difference between them lies in the nature of the "selection" of observations. In the case of migrants' wages, for example, if one believes that migration affects both wages and the way other individual characteristics (say, education, age, gender, etc.) affect wages, then a sample selection model should be employed. If, on the contrary, one believes that migration only changes the intercept of the wage equation, then a model taking endogeneity into account could be used instead.

dependent variable appears in all observations in the data. For example, remittances, a regressor in a growth or poverty equation, may be related to unobservable country characteristics, which in turn also determine growth or poverty. In that case the estimated OLS coefficient on remittances would be biased. The problem can be solved with a two-stage estimation using an instrumental variable (IV) technique. The IV estimation requires finding a good instrument, which must be correlated with the endogenous variable but should be uncorrelated with the error term and it should not appear on its own in the equation of interest. The second type of endogeneity arises from reverse causality, when one supposedly exogenous regressor is also a dependent variable that may actually be determined by the variable that the model is trying to explain. This is a model of simultaneous equations where two (or more) variables appear as both dependent and explanatory variables. The corrective procedure is again an IV technique with appropriate instruments for every endogenous variable in the model.

A few examples can illustrate how researchers deal with endogeneity. In attempts to examine the relationship between poverty and growth and migration and/or remittances, potential instruments proposed include the distance between migrants' sending and receiving countries, some education indicators for the country of origin or a measure of government stability (Adams and Page, 2005). The issue of reverse causality appears in the estimation of income growth as a function of remittances. A potential instrument suggested by Chami *et al.* (2003) is the difference in interest rates between the migrant's sending country and the United States. In brain-drain/brain-gain studies the discussion focuses on the likely endogeneity of the migration probability in a human-capital accumulation equation. Several variables have been suggested to serve as instruments for the migration probability (Beine *et al.*, 2003). They include population density as a proxy for land occupation, life expectancy at birth as a proxy for general living conditions, a country's population size (linked to quota systems), racial tensions, the log of the stock of migrants from the origin country in OECD countries and, as a proxy for wage differentials, GDP per capita as a proportion of the average GDP per capita of the G7 countries. Rozelle *et al.* (1999) estimate a system of three equations for maize production, remittances and migration for China. They use the proportion of the village labour force that has out-migrated and the education level of the most educated person in the household to identify migration. Then they use the average level of remittances of all households in the village and a shock in production of summer crops to identify remittances. Their iterated three-stage least-squares estimate finds a negative joint impact of migration and remittances on maize production.

III. REVIEW OF THE LITERATURE⁸

Aid and Migration

How does migration affect growth and poverty by encouraging remittances, technology transfer and human capital accumulation? Could these effects reduce the need for Official Development Assistance (ODA)? Migration may under certain conditions play an important role in enhancing development and promoting poverty reduction in sending countries. If so, then restrictive migration policies may disrupt the development role of migration. To explore these propositions, one must first review the potential development impact of migration on sending countries at the private, household level as well as for the community. The next requisite step investigates the linkage between the development roles of ODA and migration. Are they complementary, and could one potentially serve the objectives of the other? Of course, instead of focusing on complementarities, one could suggest using ODA to fight the causes of migration (e.g. poverty and unemployment).

Instead of focusing on national or cooperative policies to tackle migration, one could suggest the provision of aid from the rich countries to the poor ones in order to fight the causes of migration (e.g. poverty, unemployment). This could be either in the form of assistance for conflict prevention and/or resolution or financial aid for poverty reduction. However the substitutability between aid provision and migration has not been proved empirically and it is argued that there are important differences between the two sources of potential development.

The remittance channel is an obvious link between migration and aid. Remittances are large, stable and growing (World Bank, 2005a; Lucas, 2004). Figures from the World Bank (2005a) show that officially recorded remittances reached \$126 billion in 2004, \$41 billion more than in 2001. Much of this rise took place in low-income countries, where remittances rose by 18 per cent. Most of it went to South Asia, Latin America and the Caribbean, with a smaller share going to East Asia and the Pacific. China, India, Mexico, Pakistan and the Philippines were among the main gainers. The total, although underestimated, much exceeds ODA flows (\$69 billion in 2003) and private non-FDI flows, but is smaller than net FDI flows to developing countries (estimated at \$166 billion in 2004). Thus, given the remittance evidence alone, whether ODA and migration are complements or substitutes becomes an important question.

Both aid and remittances consist of transfers to developing countries. Aid is a public transfer, by definition absorbed by governments and thus invested and distributed as

⁸ Appendix Table A-1 contains a summary of the major works cited in the paper and of their findings.

governments choose. In contrast, remittances are private flows whose use is at the discretion of receiving households and individuals. Thus the two may show differences in absorption capacity as well as their uses relative to welfare⁹. Straubhaar and Vadean (2005) argue that remittances may have more beneficial effects than ODA and FDI. Their use is not tied to specific investment projects with high implementation content, they do not entail interest payments and they usually do not have to be repaid. They also seem more stable than other financial flows (World Bank, 2005a). At the same time, migrants' remittances may, for example, help in promoting development in a way complementary to the role of ODA, which ultimately eliminates some of the original causes of migration (poverty, unemployment and underdevelopment). Cogneau and Gubert (2005) argue that remittances may be better positioned to improve development prospects because individuals may allocate them better than governments direct ODA. The literature also mentions the probability of significant differences in absorption capacity between remittances and ODA, but to our knowledge no empirical evidence has yet compared the externalities that they create.

A question frequently studied concerns the reasons why migrants remit. The motives range from pure altruism (caring for those that migrants leave behind) to pure self-interest (in investing back home) and include the existence of informal contracts that tie migrants to their families in agreements to provide mutual insurance. In that respect, migrants send money home to overcome liquidity constraints and increase income security (Rozelle *et al.*, 1999; Schrieder and Knerr, 2000). Both micro and macro factors determine remitting behaviour (for surveys, see Docquier and Rapoport, 2003, and Lucas, 2004). The first reflect various characteristics of the migrant, such as his situation relative to the home country, the income of the family, intentions to return, the probability of family re-unification, education level, gender and so on. For example, intended return-migration increases remittances. Educated migrants are less likely to remit substantial amounts despite their higher earnings because their families are more likely to accompany them abroad. The duration of absence also matters. The macro parameters influencing remittances are obvious, such as economic conditions and policies in the home and destination countries, wages, exchange rates and inflation, credit market conditions and labour market conditions.

Migration may link to development through various channels — productivity, remittances, labour supply changes and responses, human capital changes, etc. Existing labour-market and credit-market conditions strongly influence these mechanisms. Labour departure

⁹ Remittances may be more stable than private capital flows. Buch *et al.* (2002) analyse remittances and capital flows to investigate similarities and heterogeneity among different sets of countries. They compare remittances with private capital flows (PCF) and official capital flows (OCF) and find that in most countries remittances are smaller than PCF, but in 18 countries they are larger and in five larger than PCF and OCF combined. Moreover remittances are less volatile than PCF, which the authors explain by noting that the role of remittances is to provide financial stability to the households of migrants. Most countries for which the two measures are equally volatile are in Latin America. Aid is usually pro-cyclical and thus thought not to provide support to governments facing macroeconomic difficulties. In contrast, remittances correlate positively with business cycles. This paper does not examine either the dynamics or the possibility of reverse causality, as in small countries the growth effect of remittances may be larger.

through migration directly affects labour productivity, and the direction and magnitude of that effect will depend on labour market conditions. The departure of labour will also have some effect on sectoral restructuring, which also affects productivity. The skill composition of labour in the sending country has relevance too, because the productivity consequences of migration will depend on the skill composition of the remaining labour force. Moreover, the skill composition of migrants and the subsequent education decisions of those who stay behind may lead to human capital depletion or creation, with further productivity effects. Credit-market conditions will influence the flow of remittances (through transfer costs and the ease and efficiency of transfer channels) as well as their investment. That investment will affect productivity and growth. Remittances may also have general macro effects (spillovers, externalities, etc) even when spent solely on consumption rather than investment. Labour supply or work effort may also change following the reception of remittances. Finally, the selection of migrants across households along with the allocation of remittances will determine the distribution of income and wealth.

Migration and Growth

Migration, particularly remittances, has an ambiguous impact on growth, and its direction depends on initial conditions and factors as well as the specific stage of the migration cycle. An important degree of heterogeneity characterises the ways remittances are used and hence their potential effects on the sending country's economy. The effects may vary with different types of migration (temporary or permanent) and the likelihood of return migration (Léon-Ledesma and Piracha, 2001). Gubert (2002) argues that how remittances influence development depends on the departure conditions, the size of migration flows and the level of income. She argues that because migration is often a response to credit constraints, remittances could help to overcome them and finance productive investments. The evidence on the impact of remittances is very mixed (Taylor and Fletcher, 2001). Under certain conditions the gains from remittances can outweigh the negative effect of lost labour, but local market imperfections (e.g. the absence of rural credit markets) may limit their development potential. An efficient rural credit market is necessary to channel savings from households with remittances to efficient investors in productive activities (but if such a market exists perhaps not so many people would leave).

The distinction between short-term and longer-term effects seems crucial (Lucas, 1987). In the short run forgone labour dampens rural production, whereas in the long term this may be offset by increases in agricultural productivity and/or remittances that may or may not get invested in productive activities. However positive remittance flows do not necessarily imply increased growth. Remittances increase liquidity, which may translate into higher consumption, increased investment, co-operatives and improved human capital through spending on health and education. Such results do not always lead to positive growth, but they may contribute to poverty reduction. Table 2 presents a simple macro framework combined with the cycle model of migration to explain the heterogeneity of growth outcomes and the differences between the short and the long run. In this framework, migration affects growth through its impacts on the labour supply, productivity and transfers (see Katseli, 2005 and Katseli *et al.* 2006).

At the first (exit) stage, as the supply of labour declines output tends to fall unless there is large pool of unemployed or underemployed labour. With emigration of skilled labour, productivity declines as well. Changes in the composition of output may occur depending on the sectoral employment of emigrants, while intra-household inequality increases. During the adjustment stage output continues to fall as emigration continues. As the information and transaction costs of migration decline, family members might accompany initial migrants, and households start using migration as a livelihood strategy. Restructuring of the home economy begins (e.g. mechanisation of agriculture), accompanied by domestic labour-market responses (formation of human capital, increases in labour-force participation rates, child labour, etc). During the consolidation stage labour supply will likely stabilise despite family reunification. An upturn in economic activity occurs due to growing remittance inflows. The magnitude of these flows and their use depend on financial market conditions. Transfers increase consumption and possibly investment leading to productivity increases. Real exchange-rate appreciation also becomes likely as demand for housing and other non-tradables increases. Growth is likely to increase and poverty to fall. As poor households receive remittances, income inequality tends to decline.

At the networking stage networks develop across transnational emigrant communities. Family reunification is completed, and second-generation emigrants appear, boosting remittances and growth. Trade and investment between sending and receiving countries expand; productivity in sending countries continues rising with investment, entrepreneurial activities and improvements in human capital. Income and wealth distribution as well as inequality depend on migrant selection across households along with the allocation of remittances. During the final repatriation, immigration or circulation stage, the home region experiences a permanent or temporary labour inflow depending on labour-market conditions and expected standards of living. Migrant repatriation often coincides with immigration of unskilled labour as labour shortages emerge in specific local markets. As the labour supply increases, productivity gains may stall and transfers decline. Urban populations tend to expand and urban poverty will likely increase. Growth effects during this stage are ambiguous, depending on skill transfers, labour-market flexibility, productivity gains and output effects of immigration. In more integrated regional markets, circular migration facilitates the creation of economic and social networks, leading to positive trade and investment externalities.

This migration cycle model does not apply equally to all countries. Some stages are not reached or their duration differs significantly from one country to another. For example, the adjustment stage may be skipped or it may involve some positive impact on growth if there is a labour surplus. Some countries have never reached the final stage of repatriation and/or immigration. Empirical evidence supports the view that time does matter. Lucas (1987) finds that in Malawi, Botswana, Lesotho, Mozambique and the homelands of South Africa migration reduces the labour force and thus reduces agricultural production in the short run. In the long run, however, remittances help to increase productivity. Thus the overall effect depends on whether long-run improvements outweigh short-run losses.

Glytsos and Katseli (2002) investigate the effect of migration on growth in Greece, through its impact on the labour market and as a function of labour-market adjustment. They suggest that the short run effect depends on initial conditions, the skill composition of the migrants and the flexibility of the labour market in the short run. The departure of agriculture workers may reduce agricultural output and exports due to the low substitutability of workers in the agriculture sector. Greece indeed experienced such reductions. In the medium term, however, remittances largely financed technical development in farming and thus promoted the mechanisation of Greek agriculture¹⁰. Glytsos and Katseli (2002) add to the discussion of heterogeneous outcomes, noting that countries with more competitive production structures will more likely benefit from migration because skills are more transferable. Katseli and Markova (1998) argue that the competitiveness of productive structures across the Mediterranean countries makes temporary migration beneficial for both sending and receiving countries. Durand *et al.* (1996) examine 30 Mexican communities in states with long tradition of migrations to the USA and find that the presence of production co-operatives increases the likelihood of remittances spent on production. The Rozelle *et al.* (1999)¹¹ results for rural China show a negative impact of migration on income only partly offset by access to remittance capital. Taylor (1992) and Taylor and Wyatt (1996), find that remittances may have positive effects on production in Mexico, but negative effects from lost labour occur too. They argue that third factors such as credit, insurance, labour-market imperfections and infrastructure determine the balance between the two. Hugo (2003) notes that despite substantial remittances to East Flores, Indonesia, a lack of appropriate local infrastructure has kept investment quite low.

Remittances may enhance growth through three main channels. The first is a direct effect through investment, particularly in productive activities. The final outcome depends on the type of investment and its returns. Second, some impact occurs through consumption and improved nutrition and health. Certain durable consumption goods, such as refrigerators, do indeed enhance health and they may thus be perceived as “productive” investment. Third, the same holds for human-capital expenditures (health, education) or nutrition, which might raise long-term productivity. Even remittance-financed consumption with none of these features may have multiplier effects¹² through market linkages (Adams and Page, 2003).

¹⁰ Greek migration is said to have retarded urbanisation in the long run, because rural people went through a migration phase before they settled down to urban life. In fact, the migrants became urbanised in the destination country. When they returned they brought the human capital and newly acquired skills and knowledge that smoothed their urbanisation and integration. Further, whereas Greek emigration contributed to increased agricultural production through the substitution of capital for labour and enhanced labour productivity, foreign immigration increased agricultural production through the supply of unskilled labour. This retarded mechanisation and restructuring of the agricultural sector.

¹¹ This paper examines whether remittances compensate for the labour loss in agriculture. If the effect of remittances and migration on rural agricultural production is positive then this would provide some support for the NELM argument that migration may serve to overcome liquidity constraints.

¹² Families may influence each other and their communities in remittance spending patterns.

Nevertheless — and despite all of the foregoing ideas and evidence — it remains true that a major concern about the potential of migration as a source of development relates to the use of remittances (Rapoport and Docquier, 2005, review the remittance literature). The main critique persists that remittances mostly fuel consumption rather than investment. For Mexico 76 per cent of male migrants queried in one survey spent *migradollars* on consumption, 14 per cent on housing and 10 per cent on productive activities (Durand *et al.*, 1996; see also Taylor *et al.*, 2005). Yet the impacts of remittances still may differ depending on where they originate and the characteristics of the households receiving those (Boucher *et al.*, 2005). Early studies in the 1970s supported the view that remittances mostly finance consumption and housing construction. Griffin (1976) and Stark (1978) offered the more optimistic view that remittances produce investment, especially in rural areas. More recent work places them into endogenous growth models (Mesnard, 2001; Mesnard and Ravallion, 2001; Rapoport, 2002; Docquier and Rapoport, 2003). Mesnard (2001) suggests that temporary migration allows workers to accumulate financial capital and thus increase their investment activity. Remittances may thus provide a useful shock to wealth distribution in the home country. Given its investment results, migration may help a country to move from stagnation to development. Table 3 summarises several studies that find some investment and multiplier effects from remittances. They reveal considerable evidence of high multipliers.

The impact on investment and multiplier effects depends on the supply response of local production activities (Lewis and Thorbecke 1992, Subramanian and Sadoulet 1990, Parikh and Thorbecke 1996) stemming from construction booming (Adelman and Taylor (1990) for Mexico and Burney (1989) for Pakistan). Greater impact is found in countries which have incorporated migration into macroeconomic planning and have adopted macro policies which favour market development, such as Korea and Thailand. Glytsos (1999) looks at 7 Mediterranean countries to analyse the link between remittances, consumption, investment, imports and income¹³. He finds a strong impact on income for Egypt and Jordan but a moderate one for the other five countries. Evidence for a group of Eastern European countries in Léon-Ledesma and Piracha (2001) shows a positive impact of remittances on employment and productivity, both directly and indirectly through investment. A strong positive multiplier (x3) is also found by Adelman and Taylor (1992) for Mexico in the late 1980s. In addition Massey and Parrado (1998) and Massey, Goldring and Durand (1994) studies on migradollar spending suggest that this spending has substantial multiplier effects in rural commodities. Durand, Parrado and Massey (1996) find that each \$1 remitted to Mexico, increases GDP by \$2.9 and economic output by \$3.2. Adelman, Taylor and Vogel (1988) get an estimated remittances multiplier of 1.78 for a Mexican village. Expectations may have a role to play in the way remittances affect the economy. If shocks induced by remittances are perfectly anticipated, then the effect depends on the flexibility of wages and prices¹⁴.

¹³ Glytsos estimates a dynamic model of aggregate consumption, investment, and imports and their feedback through GDP for the period 1969-1993. In this setting he simulates the direct and indirect effects of remittances to find a positive effect of remittances on investment.

¹⁴ The effect would be zero if prices and wages were flexible, but there could be some short term effect if the adjustment was slow.

Azam and Gubert (2002) find evidence for Mali that families that receive remittances have better capital and labour inputs¹⁵ but have lower returns to agriculture than those not receiving such transfers do. One might interpret this as evidence of shirking following money transfers from migrants. Chami *et al.* (2003) find a negative coefficient on remittances in a cross-country GDP growth equation for 113 countries¹⁶ – but this negative relationship could have appeared because the study controls for investment and thus this may remove any effect of remittances on investment and its subsequent effect on growth. On investment in local infrastructure, Nyberg Sorensen (2004) suggests for Morocco that remittances through family and village networks have played an important role in supporting local economies and infrastructure development in some areas (e.g. the Rif region). Certain regions saw construction booms and the creation of small and medium-sized enterprises that transformed marginal rural areas. The evidence is conflicting, however. Some people argue that returning migrants' skills do not match the needs of the local labour market. Certain studies show evidence of remittances going mainly for consumption rather than productive investment, whereas others show that remittances may have saved some of the smaller cities, and construction booms have actually proven beneficial for rural economies. Investments in other sectors include vans, taxis, coffee and teashops and restaurants. Khachani (1998) argues that migration has opened new opportunities for Morocco, particularly with investments in higher-technology equipment for land exploitation and in establishments linked to tourism, food processing and the supply of building materials.

The creation of small and medium-sized enterprises financed by remittances or the savings of returning emigrants represents another type of migration-related investment with an impact on sending countries. It occurs through two channels – new skills acquisition and savings that help to overcome liquidity and credit constraints. Evidence favours the hypothesis that remittances matter for business development. Mesnard (1999) found self-employed return migrants in Tunisia to have accumulated twice as much as have salaried migrants, and he provided evidence that savings accumulated abroad alleviate liquidity constraints to self-employment. Dustmann and Kirchkamp (2002) found that half of the Turkish migrants returning by 1984 had started their own businesses. Woodruff and Zenteno (2001) reveal that remittances finance about one-fifth of capital investment in urban Mexican micro-enterprises, and Mesnard and Ravallion (2001) stress that savings accumulated abroad have great importance in explaining business start-ups by returning migrants in Tunisia. In Morocco, Leichtman (2002) finds that remittances have led mostly to an increase in start-ups of small and medium-sized businesses, at the expense of agriculture. Wahba (2003) examines the potential impact of return migration on investment and entrepreneurship in Egypt¹⁷. Her findings suggest that return migrants will more

¹⁵ Evidence in Mochebelele and Winter-Nelson (2000) shows that in Lesotho, households that received remittances had less technological inefficiency.

¹⁶ The controls used include the share of GDP invested, private capital inflows and a set of regional dummies.

¹⁷ She investigates the role of work experience acquired abroad in bringing skills as well as ideas, experience with more advanced commercial environments and other unobserved characteristics. She finds that 10 per cent of returnees use their savings to finance economic projects.

likely be employed in the private sector, away from agriculture and in clerical, sales and service jobs. Educated migrants tend to benefit more from working abroad than non-educated ones. She recommends that policies support returnees in establishing business by providing necessary information on potential investment projects.

Migration and Human Capital

The so-called brain drain is becoming a major concern about migration. This massive departure of skilled labour, a relatively scarce resource in developing countries, takes place at the first, exit stage of the migration cycle. Lucas (2004) shows evidence of it mostly in low-income countries and an important degree of heterogeneity across regions and countries. The brain drain (to the United States, in Lucas's data) is most acute for the low-income countries. Very worryingly, as Cogneau and Gubert (2005) suggest, poorer countries may send fewer migrants to developed countries, but they send a high proportion (for them) of skilled migrants. For example, skilled migration is not a problem in Asia notwithstanding that many skilled migrants leave these countries. But in Africa where skilled population's share is smaller, the departure of the most skilled can become a great impediment.

Possible explanations for why the departure of skilled migrants may be a problem include among others the direct loss of human capital, forgone public spending, forgone returns to education and the negative externality on people staying behind. Skilled-immigration policies of the developed world often encourage this loss to developing countries of one of their most valuable resources. Examples include the US H1-B visas and the case of Indian information technology (IT) workers in the UK. Note, however, the important distinction between human capital accumulation in the country of origin and that taking place in the destination country. In the first case, the cost is borne by the country of origin, and this implies a loss for that same country. In the second case, in which the host country pays the costs of education, leaves the possibility of a gain for the country of origin.

The literature on brain drain and brain gain is vast. Commander *et al.* (2003) present a recent and thorough survey of the literature. The authors discuss, skilled migration has changed over the decades. In the 1960s and 1970s it consisted mainly of nurses and teachers, whereas more recent years have seen a large increase in information and communications technology (ICT) workers. The first type of migration can have direct and very significant negative effects on home-country populations because of the direct externality it introduces in sectors like health and education. The more technical migration of the second type may also have negative impacts by depleting highly skilled workforces, but they may be less obvious.

Initial brain-drain models assumed perfectly competitive markets, which set the wage equal to marginal product. In this setting, skilled migration had no impact on the welfare of those who stayed behind. Yet this assumption cannot be valid if migrants take their human capital with them. Later models, such as Bhagwati and Hamada (1974) use a general equilibrium framework, in which migration may decrease skilled unemployment but also increase expected wages and skilled wages. There may also be spillover effects transmitted to other sectors of the economy. Bhagwati and Hamada introduce the notion of a ladder effect by which skilled workers who stay behind become better matched to skilled rather than unskilled jobs, thus

reducing unskilled unemployment. This may not be the case for migration of doctors, for example, which reduces the flow of doctors from urban to rural areas and thus has a negative net impact. These early brain-drain models treated demand as exogenous and placed certain assumptions on education costs and public subsidies to education. They did not allow for heterogeneity between countries and did not take into account the state of labour markets and the size of countries.

The first empirical study on the size of the brain drain, Carrington and Detragiache (1999), uses US census data and OECD migration statistics for 1990. It compares stocks of immigrants from the sending countries to the size of their educated populations, using the Barro and Lee (1993) indicators on educational attainment. The analysis, although original, it is not without problems: the data used have many weaknesses, with many missing countries and the limitation in the OECD data set of not distinguishing among different education levels. The authors are obliged to make the strong assumption that the skill composition of migrants to the OECD is the same as that of migrants to the United States¹⁸. Their data also do not take into account migration to the Middle East (especially the Gulf region), the third largest immigration region. The definition of migration comprises more than employment migration, which is most likely to be linked to the brain drain. Overall, the authors find considerable evidence of higher migration at higher skill levels, especially from small countries in the Caribbean, Central America and Africa, where skill losses may go up to 30 per cent of a country's population with specific skills. They also find substantial losses in the larger Asian countries, such as Korea, Chinese Taipei, Taiwan Province of China and the Philippines.

Auriol and Sexton (2001) use EU labour-force survey data and education statistics to show that highly skilled migrants in 1997 accounted for around 38 per cent of the total migration inflow into employment, but the inflow represented only a very small fraction (0.5 per cent) of total employment.

Some recent papers suggest that increased skilled migration has also led to changes in the supply of education in developing countries. In India, for example, private institutions have started training specialists for the software industry. Although the supply of public education may be inelastic, the private supply may be more elastic. This could explain the increased numbers of skilled specialists in India or the Philippines (Arora and Athreya, 2001). This supply response is likely confined to very few developing countries, however, and not necessarily the poorest ones.

The more recent theoretical studies of endogenous growth and the beneficial brain-drain hypothesis view the issue from a different angle. If the migration possibility encourages more skill creation than is lost with migration, the net impact may be positive. The overall benefit to the sending country may be even higher if skill accumulation entails benefits additional to the

¹⁸ The specific assumption states, " . . . obtain estimates of the brain drain from developing countries to the OECD as a whole by assuming that migrants to the US have on average the same educational attainment as migrants to the rest of the OECD. Thus the estimates are particularly tentative for countries which do not send many migrants to the US".

private gains of those who acquire the skills. Other studies note positive impacts¹⁹ through other mechanisms. Remittances may buy schooling, which may offset some of the human capital loss²⁰. Vidal (1998) represents arguments in favour of the intergenerational transmission of human capital. Vidal assumes that the higher the human capital of one generation, the more effective will be human capital formation in the following one, which would provide some positive impact of skilled migration under the crucial assumption that migrants' human capital stays in the home country. Rather implausible assumption for permanent migration, this may not be unrealistic for temporary migration. Spillovers may occur between skilled and unskilled workers, as in Mountford (1997), where current labour productivity depends on the share of the population with education in the previous period. Finally, Beine *et al.* (2001, 2003) also discuss skill transmission from one generation to another. The first paper uses the Carrington and Detragiache data and some additional variables to explore for a positive impact of skilled migration. These OECD data count immigration rather than emigration rates, and they cannot distinguish between highly skilled and low-skilled migrants²¹. The second uses the same Carrington and Detragiache data for 50 countries to test the brain-gain hypothesis and examine the growth effects for individual countries²². The papers find that most countries with low levels

¹⁹ Possible sources of the positive externalities of education include first agglomeration effects, which increase productivity and thus earnings through higher education of some members of the labour force. Second, indirect effects may occur through the impact of higher education on public goods. Third, dynamic effects generate higher growth because of either human capital accumulation (with economies of scale) or technical progress.

²⁰ Empirical work by Hanson and Woodruff (2002) finds that children in households of migrants received 0.7 to 1.6 years of schooling more on average than those of non-migrants. In the same spirit, Cox, Edwards and Ureta (2003) find that remittances contribute to less school-leaving in El Salvador.

²¹ The paper raises the question of the endogeneity of migration and treats the issue of a non-linear relationship linking human capital accumulation and migration prospects. It interacts migration rates by using a dummy variable for the threshold of the underdevelopment trap. It estimates a system of three equations on data for 37 countries. The first, migration-rates equation is meant to capture the *ex ante* probability to migrate. Migration rates are estimated as a function of the wage differential, a population measure and a measure of public expenditures on education. The second equation treats human capital accumulation as a function of migration, migration interacted with a dummy variable (equal to one if in the underdevelopment trap) which appears positive and highly significant, and public expenditure for education. The third equation models growth as a function of migration, human capital accumulation (positive) and remittances.

²² They estimate a system of two equations. In the first, a measure of human capital formation is estimated as a function of the expected foreign return to education, the cost of acquiring which depends on public expenditures on education, workers remittances, indicators of political tensions and ethnic diversity. The second equation treats average growth rates in 1985-1990 and 1990-1995 as a function of the *ex post* human capital stock at the start of each period, the number of telephones per capita (a measure of physical capital), remittances, ethnic diversity and political instability, the log of per capita GDP and regional dummies for Sub-Saharan Africa and Latin America. The authors also address the endogeneity of the migration probability in the human capital accumulation equation, the idea being that because more educated people are more likely to move a better

of both skilled migration and human capital benefit from skilled migration. The relatively small number of winners nevertheless corresponds to 80 per cent of the sample population.

All these mechanisms assume some uncertainty about the probability of migration. Not all educated workers will emigrate, which leaves room for at least some human capital accumulation. More important, these models assume an infinite supply of education services to satisfy increased demand due to the prospect of migration. Yet this assumption is violated in most of the poorest countries, those hurt most by the brain drain. Thus even with higher incentives to acquire education the response in terms of human capital accumulation may be very low if not zero because of the lack of education establishments.

Acquiring education may also serve different purposes. Assuming that employers in receiving countries cannot screen potential migrants, the prospect of migration and the higher expected earnings associated with it may motivate demand for additional education. The US H1-B visas to attract skilled professionals offer an example of employer screening. Beyond such screening, however, extra education may yield higher migrant earnings.

Last but not least, return migrants may promote human capital development and social and cultural change. Often facilitated by diasporas, they can bring home new skills, new ideas (see Guilhoto and Sandron, 2003, on improvements in the health sector and cultural change) and information and technology. Even without return, networks and diasporas may boost activity and business in source countries. Whether this social capital is a form of human capital is an open question. Finally, migration may promote the circulation of information and technology, and advances in communication technology may reduce the extent to which skills are lost²³. Remittances are often invested in schools, teachers or training resources.

Migration and Poverty and Inequality

Poverty and growth are interrelated but their interaction with migration can be complicated. The empirical evidence points toward a negative relationship between poverty and remittances (Lucas, 2004). Remittances lead to poverty reduction despite the fall in output due to labour departure. They increase receiving households' income and through multiplier effects increase wages and liquidity (especially for poor, usually rural households facing severe credit and liquidity constraints) and may lead to investment. Although agricultural production may decline somewhat in the short run, higher rural wages for those who stay behind may lead to poverty reduction. These effects will not occur, however, if migrants take capital with them²⁴ or if the loss of labour leads to a prolonged drop in output. The new labour economics of migration

educated population may lead to higher emigration rates. Human capital accumulation is estimated by IV, where the first stage attempts to predict migration rates. They find no evidence for non-linearities.

²³ These links should be treated cautiously since endogeneity and reverse causality may be relevant.

²⁴ The issue of migrants taking some or all of their capital with them is crucial. Models of migration make specific assumptions about it, and outcomes depend on whether some of the migrants' capital stays at home. Physical capital is more likely to remain in the case of temporary migration when migrants intend to return.

(NLEM) theory treats migration as a livelihood strategy (Stark and Taylor, 1991). In the NLEM model, remittances may provide some liquidity and stimulate technological investment and change in the presence of liquidity and credit constraints. When migration is seen as a household strategy to fight liquidity constraints and various market imperfections, remittances prove beneficial for the poor even with substantial production losses (Taylor, 2001). Remittances may compensate for the lost output by adding directly to household income and offering households the opportunity to invest in productive activities.

How migration affects poverty also appears in the migration-cycle model and macro framework presented in Table 2. Poverty reduction is most likely during the consolidation stage of the cycle, when productivity, transfers and growth increase significantly. It is less likely in the early stages of exit and adjustment, when poverty and inequality may increase. During the consolidation stage, income inequality tends to decline as poor households receive remittances. At the networking stage income and wealth distribution as well as inequality depend on migrant selection across households and the allocation of remittances. Urban poverty may increase in the final stage as the urban population tends to expand.

Despite a scarcity of appropriate data, some studies try to assess the extent to which migration may be a poverty-reducing strategy. Adams and Page (2003) find that a 10 per cent increase in the share of migrants in the population reduces the number living on less than \$1 per day by 1.9 per cent. A 10 per cent increase in remittances cuts that number by 1.6 per cent. In a later paper (2005) that recognises the endogeneity of remittances and/or migration, the same authors find higher impacts of migration and remittances estimated with instrumental variables (2.1 per cent and 3.5 per cent respectively). Bouchachen (2000) argues that remittances allow a large number of households to achieve a decent income. Nyberg Sorensen (2004) finds that remittances reduced the number Moroccans living in poverty by 1.2 million. Lachaud (1999) looked at remittances to Burkina Faso in 1994-1995. He found that they went mostly to rural households headed by farmers or inactive people. They reduced rural poverty by 7.2 percentage points and urban poverty by 3.2 percentage points. Other studies attempt to simulate the effect on consumption and poverty of stopping migration. Leliveld²⁵ (1997) and Gustafsson and Makonnen (1993) conclude that in Lesotho remittances play a very important role in giving households the means to achieve at least minimum food requirements. These studies do not take into account the indirect multiplier impact of remittances.

Along with poverty, inequality has primary importance in discussions of how migration may affect peoples' lives and the economies of sending countries. The relationship between migration and inequality, like that between migration and poverty, remains an open empirical question. It varies significantly over the migration cycle. In the early stages of development, the very poor cannot afford to migrate. Mostly wealthier individuals, the least credit-constrained, are more likely to move. This increases inter-household inequality in the short run. In the long run, however, inequality may actually decline because migrant networks may lower the cost of moving and thus make the migration decision easier (Massey *et al.*, 1994; Stark *et al.*, 1986, 1988; Munshi, 2003). This

²⁵ A descriptive work based on a household survey conducted in 1990 in 195 rural households on Swazi Nation Land.

inequality behaviour conforms to the migration-cycle model. During the exit stage, inequality may increase. During the adjustment stage, migration and transaction costs go down and poor and rural households start using migration as a livelihood strategy. At the consolidation stage poor households start receiving remittances that, often transformed into productive assets, may lead to a further decline in inequality.

The empirical results are mixed. In the Philippines migration seems inequality-neutral initially, but then inequality rises. In Mexico it increases at first, then declines; according to Stark *et al.* (1986) any initial increase in inequality disappears in the longer run through effects in the labour market. Adams (1991, 1998) finds a positive impact of remittances on inequality in Egypt and a neutral one in Pakistan. Barham and Boucher (1998) look at the same relationship in a small coastal town in Nicaragua. They show a negative correlation when domestic income sources are treated as exogenous, but it turns positive when migration and domestic labour participation are taken into account. Milanovic (1987) used Yugoslav household surveys to find that remittances increased inequality. Taylor (1992) used some longitudinal data from Mexico to find that in the short run remittances have an inequality-enhancing effect but in the long run inequality declines because poor households can transform remittances into productive assets and richer ones have stopped migrating. Taylor and Wyatt (1996) find a negative effect of remittances on inequality in rural Mexico. They show that it depends on the initial assets of the household²⁶. Mesnard (2001) uses an overlapping-generations model to show that although migration may increase inequality in the short run, it will likely work in the opposite direction in the long run. She argues that with capital-market imperfections remittances may lead to higher prosperity, given their intergenerational nature. The same holds if liquidity constraints impede investment in human capital. Stark *et al.* (1986, 1988) allow some role for migration tradition in the relationship between migration and inequality. They show a positive relationship between remittances and inequality for a Mexican village with only a recent history of migration and a negative one — an equalising effect — for a village with long migration history. This evidence supports both the idea of migration as a diffusion process and the migration-cycle model, which predicts that inequality may fall at the stages of consolidation and networking.

Studies of the bequest mechanism of remittances provide some indirect evidence on the link between migration and inequality. For example, Schrieder and Knerr (2000) discuss whether wealthier families receive more remittances because of inheritance hopes. If so, remittances do not flow to those who most need them, and this mechanism may have some role to play in inter-household inequality.

Intra-household or family inequality is still another aspect of the migration/ inequality link. It is under-investigated. Lucas (2004) suggests that intra-family inequality may change after the migration of one or more family members. Glytsos (2002) mentions that remittances may increase the independence of women and thus have effects on the labour supply, fertility decisions and thus demographics. This may be partly due to the absence of men in the family, as it is mostly men who migrate. Leichtman (2002) argues that migration has led to significant

²⁶ Livestock assets dampen the effect of remittances on income whereas non-marketable land rights enhance it.

changes in family structure, fertility decisions and the independence of women and young family members. Finally, urban/rural inequality has relevance too, because of the rural-urban shift in populations following return migration.

Migration, Social Protection and Insurance/Risk Diversification

Migration is often seen as a household strategy to ensure some social protection and cover against risk in imperfect insurance and credit markets. Lucas and Stark (1985) and Stark and Lucas (1988) show that remittances increase after a dry season for families whose productive activities depend on rainfall. They interpret this as evidence of risk diversification through migration. Dreze and Sen (1989) show that remittances saved certain households from famine. Schrieder and Knerr (2000) demonstrate that remittances serve as only an imperfect insurance mechanism in Cameroon. Gubert (2002) estimates transfer functions in the Kayes region of Mali. She finds a positive correlation between remittances and three types of shocks — the number of persons dying in the household, per capita expenses for health and agricultural income shocks. Dia (1992) finds that in Senegal remittances finance irrigation facilities that increase the carrying capacity. Food security is the objective of remittances, but they may also serve for productive investment on farms. Lucas (1987) also found a negative relationship between remittances and rainfall, which could suggest that they indeed provide cover against risks and shocks, but argues that this may be possible only above some threshold income level.

“Migrant Syndrome” or Dutch Disease

Migration is a private decision, and thus the individual or family concerned should be better off by choosing to engage in migration. Despite this benefit the population may face a cost. A pessimistic view argues that remittances may only partly compensate for lost labour and capital. Income per capita may fall with migration if the marginal product of migrants is high and if they take capital with them. Moreover remittances are often accused of causing a Dutch disease variant. Although undoubtedly important sources of foreign exchange, they entail the danger of a real appreciation and thus reduced export performance that may slow growth and curtail employment. They may increase import demand, with adverse effects on the balance of trade. They may cause shifts in the production mix from tradables to non-tradables. Some empirical evidence suggests a modest remittance impact on low-income countries (Adams and Page, 2003) and even a negative one in middle-income countries (Chami *et al.*, 2003). On the other hand, migrants' associations may play a positive role in source countries through productive activities, establishing new businesses²⁷ and contributing to development in health and

²⁷ Iskander (2005) analyses the impact of two programmes in Mexico, *Mi Comunidad* in Guanajuato and *Tres por Uno* in Zacatecas. Both attempted to promote the productive use of remittances and help migrants develop projects in their origin communities. Although the first focused solely on economic growth, the second entailed some engagement between local government and the migrants, which promoted discussion as the means to conflict resolution. The evaluation clearly shows that the second was relatively successful whereas the first was a complete failure. Iskander argues that this evidence strengthens the need for a parallel strategy of economic growth along with a social process, because remittances should be seen as a mix of capital and social elements.

education. According to Cogneau and Gubert (2005) the net effect of these opposite effects depends on country-specific characteristics and conditions.

The Impact of Aid on Migration

The main link between aid and migration lies in the role of aid in employment creation and its effect of reducing migration pressure. One channel for reducing the pressure operates through the labour market. ODA-promoted development may increase the demand for unskilled labour and thus improve work opportunities for poor individuals, who would then become less likely to migrate. A way to investigate whether European countries actually use aid to reduce migration pressure is to look at ODA data to check whether those flows concentrate mainly on migrant-sending countries (Lucas, 2004). Stalker (2000) reveals some correlation but argues that former colonial ties have the main influence.

Overall, the connections between aid, poverty reduction and migration reduction have not been proved empirically. Doubts persist about whether foreign aid may in fact reduce poverty, or if it does whether poverty reduction couples with less migration. The empirical evidence conflicts, but a common issue is the “migration hump”. This describes the relation between development and migration as having an inverse U shape (Faini and Venturini, 1993; Stark and Taylor, 1991; Vogler and Rotte, 2000). In early development stages migration may increase as poor households find the means to migrate. This continues in the short run, but at a certain development level migration starts to decline because potential migrants find relatively good jobs at home. Migration motives like income differentials between countries become weaker over time. The reasons offered for migration humps include demographic factors (Hatton and Williamson, 1998, 2002), higher income with development, industrial restructuring, higher returns to remittances and migrants’ networks.

Early research attempted to explain the mass migrations from Europe in the nineteenth and early twentieth centuries. Hatton and Williamson (1998, 2002) argue that these migration flows resulted mainly from large income gaps between origin and destination countries, an idea consistent with a migration-hump hypothesis. The authors further explain these migrations through population growth, existing migration networks and structural economic shifts out of agriculture. Empirical evidence examining more recent migration trends also confirms the predictions, but it shows on balance that the impact of aid and development on migration depends heavily on the context, the economic characteristics, conditions of economic restructuring and the mechanisation of agriculture. Griswold (2003) argues that when conditions at home improve, the propensity to migrate may also rise, because under good conditions remittances are even more beneficial than under bad ones. Not all studies concur, however. Some find that the migration hump exists but only in very low-income countries. There, development and subsequent economic restructuring lead to employment cuts (e.g. restructuring out of agriculture) that, combined with population growth and low development levels, become migration push factors. These factors, combined with financing that becomes available through rising returns to remittances, can explain a rise in migration pressure.

Faini and Venturini (1993) find evidence of a negative relation between migration and development for Greece, Portugal and Turkey, but not for Spain or Italy²⁸. They argue that the last two countries may already have placed themselves on the downward part of the curve through advanced development relative to the others. Clark *et al.* (2002), studying immigration to the USA between 1971 and 1998, find a negative relationship between income and migration for middle-income and high-income countries that reverses for low-income countries, e.g. some African countries.

The major doubt about ODA's role in reducing migration pressure arises from cross-country evidence that most migrants come from the richer rather than the poorer countries of the third world (Tapinos, 2000; Cogneau and Gubert, 2005; Massey, 2003; Katseli *et al.*, 2006). Katseli *et al.* (2006) show that only a few low-income countries send high numbers of low skilled migrants to the OECD member countries of the EU. These countries (Algeria, Morocco, Tunisia, Bosnia-Herzegovina, Albania, Croatia etc) are distinct from other low-income countries that send relatively few unskilled migrants. They are close geographically to many rich countries, with which several have former colonial ties.

Just as a poverty reduction in an origin country may produce an increase in migration in the short run, an increase in ODA flows or more liberal Northern trade policies *vis à vis* Southern agricultural exports may do the same in very poor countries. High poverty levels and consequently relatively high migration costs largely explain this. Cogneau and Gubert (2005) highlight Mali and Mexico as two countries where most migration comes from regions not classified as among the poorest. They suggest that ethnic factors and migrant networks may explain not only these regional differences within countries, but also inter-country differences in migration-poverty patterns.

²⁸ Straubhaar (1986) examines annual migration rates from some Southern European countries and Turkey to Western Europe to find that pull factors (such as income gaps and employment opportunities in the receiving country) matter for migration. Zimmermann (1995) looks at migration to the Federal Republic of Germany from the same countries plus Yugoslavia and finds that after 1974 mostly push rather than pull factors were at work.

IV. TRADE AND MIGRATION

The Impact of Trade on Migration through Changes in the Labour Market

Traditional trade theory teaches that trade and migration are substitutes. Thus trade liberalisation should reduce migration pressure by increasing the demand for all labour through increased exports of unskilled labour intensive goods. Trade also leads to factor-price equalisation and thus convergence of wage rates internationally, which would weaken the propensity of labourers to move across borders. These effects are likely to take time, however, and may hold true only in the long term. The theory also relies on very strong assumptions. More recent thinking points toward some complementarity between trade and migration, at least in the short to medium term. For reviews of the literature see Assous (2000), Tapinos²⁹ (2000) and the other background papers in this Development Centre policy coherence series.

Some empirical evidence confirms the basic hypothesis. Faini and Venturini (1993) find that protectionist policies in Northern countries support their sectors intensive in low-skilled labour, which increases the demand for foreign workers and thus enhances one of the migration pull factors. At the same time they discourage labour-intensive exports from developing countries thus create additional push factors. Faini and De Melo (1995) show that through currency depreciation, which increases exports and thus the demand for labour, trade liberalisation reduces the propensity to migrate. In contrast, Cogneau *et al.* (2000) find that regional integration in its early stages may have only a small migration impact, and deeper regional integration may reduce the propensity to migrate if it involves significant investment in infrastructure, human capital, etc³⁰.

Changed assumptions have emerged under which traditional trade theory and the factor-price equalisation theorem do not hold and give way to other outcomes. With economies of scale or differences in technology between countries (Assous, 2000; Markusen, 1983) trade and migration may become complements. Giubilaro (1997) argues that demographics may overwhelm economic factors in the link between migration and trade. In countries with fast-growing populations, such as the Maghreb countries and Mexico, regional integration may play

²⁹ Tapinos suggests the European Union as a textbook case on the link between free trade, migration and regional integration because ten years elapsed between the free movement of goods and that of labour. He argues that although trade may raise living standards and income levels, it may not in the short term affect the propensity to migrate for the entire population.

³⁰ Mouhoud (1998) presents similar views on FDI and its impact on migration.

only a limited role because migration pressures will likely continue to rise. It may have a more important role for migration reduction in countries that have passed into later stages of the demographic transition.

Schiff (1994) argues that migration pressure will rise in the long run following trade liberalisation, while the short term effect is ambiguous. He bases his model on migration cost and capital-market imperfections rather than technological differences or economies of scale. He argues that given the high cost of migration, liquidity constraints alone and imperfect credit markets do not allow poor potential migrants to take the decision to migrate. Most important, he claims that this complementarity could be stronger in countries with low labour income and high migration costs, which depend on geography, migration laws in sending and receiving countries and transport technology. It is more likely to be at work in southern Mexico and Central America than in northern Mexico, and in the Sahara region of the Maghreb, Mali and Senegal rather than in the northern Maghreb. This reasoning, consistent with the life cycle model of migration (Katseli, 2005), allows for some heterogeneity in the relationship between trade liberalisation and migration across countries. Assous (2000) argues that such complementarity may be stronger between countries at different levels of development. Tapinos (2000) asks whether the benefits from trade affect the population groups most likely to decide to migrate. The answer is rather negative. Trade liberalisation is likely to touch agriculture, for example, but not formal and informal employment in the public or private sectors and thus not the urban poor who are the most likely to leave. He concludes that these effects probably are context-specific.

Cogneau and Tapinos (2000) express further doubt about trade/migration substitutability. They see limited empirical support for a medium-term growth increase induced by trade opening, which in turn casts doubt on the migration-damping role of trade. Their model explains short-run increases in migration by the structural changes that take place with trade openness. Development entails inter-sectoral movements of workers and production, which imply that incomes of people working in specific sectors like construction may increase and provide the means to migrate. Structural changes also may render employment opportunities more volatile, which would constitute an additional push factor for migration. An additional element which distinguishes trade from migration is the time at which benefits are reaped³¹. Time plays a crucial role in the individual migration decision. Migration will likely entail an immediate improvement in welfare, whereas the improvement induced by trade openness will take place only in the long run. Cogneau and Tapinos also stress the importance of uncertainty in the country of origin about economic stability. It affects the socially perceived benefits of trade liberalisation, which along with the functioning of government and the markets may determine welfare. In contrast, the migration decision is more personal.

³¹ Cogneau and Tapinos (2000) also distinguish between temporary and permanent migrants. They say that wage differentials and the probability of employment play the major decision roles for the former, and the prospects for social and professional mobility mainly motivate the latter. In temporary migration, differences in gains as well as prices have an impact on the individual and household decisions. In that sense the costs and benefits faced by the temporary migrant constitute choice variables, given the arbitrage between his consumption in the destination country and the savings transferred to his family.

Nyberg Sorensen (2004) presents Morocco as an experiment for the link between trade and migration. Interest centres on how the free trade agreement signed in 2000 between Morocco and the EU will affect migration pressures. Some researchers argue that this should lead to more migration pressure because of potentially higher unemployment in agriculture following trade opening. Nyberg Sorensen argues, however, that if a large increase in labour-intensive exports occurs it will likely reduce migration pressure by creating labour demand³².

Finally, the impact of trade flows on migration may differ for skilled and unskilled labour. With substantial migration costs and liquidity constraints, trade opening may not reduce migration pressure on unskilled labour but more likely increase it. Highly skilled people, however, will have had the means to migrate before trade liberalisation. Thus trade opening may alter the skill composition of migrants.

³² This confirms the Development Centre's choice of Morocco for one of the case studies in this project.

The Impact of Migration on Trade

Trade-migration linkages may run the other way, from migration to trade, through two main channels³³. First, migrants serve as trade intermediaries and information providers. They bring important new information from their home countries — knowledge of opportunities and potential markets, access to distribution channels, contacts and language, familiarity with local customs, laws and business practices and capacity for contract enforcement (Head and Ries, 1998; Girma and Yu, 2000). This facilitates trade and solves communication problems. Migrant networks help contract enforcement because reputation can play a more important role. Access to information and knowledge about market and trade opportunities offers advantages to immigrants themselves in setting up their own businesses. Second, immigrants bring preferences for goods produced in their home countries (Wagner *et al.*, 2002), likely stimulating home-country exports. These preferences may increase the demand for imports of these specific goods if such products are not available in sufficient quantities in the host countries.

Head and Reis (1998) test the hypothesis that immigrants increase trade with their countries of origin because of superior knowledge of market opportunities. In an augmented gravity model³⁴, the authors look at Canadian trade with 136 partners for 1980-1992 and find that a 10 per cent increase in immigrants from a country is associated with a 1 per cent increase in exports and a 3 per cent increase in imports³⁵. Wagner *et al.* (2002)³⁶ examine cross-province

³³The main studies here are Gould (1994), Head and Ries (1998), Dunlevy and Hutchinson (1999, 2001), Rauch and Trindade (2002), Girma and Yu (2002), Combes *et al.* (2002), Rauch (2001) and Wagner *et al.* (2002).

³⁴They estimate a model of Canadian imports from country *j* as a function of the resident immigrant population from country *i*, the product of GDP of the two partners, distance between them, a dummy for adjacency and an annual measure of openness. They use two alternative specifications for the error term and also add year and region dummies. The measure of immigration is the cumulative sum of immigrant inflows, later corrected for attrition. They also attempt to add a lagged dependent variable among the regressors to examine the dynamics. They find the long run effects to be only slightly smaller than those estimated initially.

³⁵They argue that immigrants serve as trade intermediaries if there are high transaction costs in international trade. To explain the larger effect found for imports, they argue that although the knowledge channel affects both exports and imports, preferences have impact only on imports. To test for heterogeneity of the trade elasticity with respect to types of immigrants, they amend the model to allow the trade elasticity with respect to immigration to be a function of the class composition of immigrants — refugees, independents, entrepreneurs and other business related immigrants, leaving family immigrants as the reference category. They find larger effects for the independents.

³⁶Their specification allows decreasing marginal returns to immigration along with a random-encounter model. They also use fixed effects at the national level but the observation unit is that of provinces. This deals with the trade-off between the importance and relevance of fixed effects and the possibility of exacerbated measurement error. Other factors that may affect trade include distance, historical and cultural ties, overlapping political systems, openness to trade and investment and economic development. Their dynamic specification gives results very similar to the baseline specification, although somewhat smaller. Fixed effects give rise to somewhat smaller coefficients. The random-encounter model opens several trade opportunities between two countries, some easy, others hard. The latter require immigrant contributions, especially skills, knowledge and connections.

variation in international trade and immigration patterns within Canada. Both papers find a stronger effect on imports than on exports³⁷ and base their explanations on the preferences channel. Girma and Yu (2000) use data from the UK to estimate a similar hypothesis. Co *et al.* (2004) use US state-level data to find a strong link between immigration and trade. They claim an innovation in distinguishing among destination US states; comparable previous research treated the US as a homogeneous whole³⁸. Dunlevy and Hutchinson (2001) investigate the impact of immigrants on American exports during the late nineteenth and early twentieth centuries. Their results confirm a positive relationship between immigration from a specific country and US exports to it³⁹. Rauch and Trindade (2002), use another extended gravity model to examine trade patterns in 1980 and 1990. They find that the cross product of ethnic Chinese population shares in each trading-partner pair relates positively to trade volumes. Most important, they examine these effects for different types of goods, distinguishing mainly between homogeneous and heterogeneous products⁴⁰.

Combes *et al.* (2004) study the role of business and social networks in trade between French regions. These networks are proxied by the financial structure and location of firms as well as bilateral stocks of migrants. Migration enters the analysis through the immigrants' business and social networks. This paper adds to the argument that networks become most useful for trade in differentiated goods, where information is very important. The estimated model is based on French interregional trade (94 regions), with a structural specification based on a model of trade with monopolistic competition, home-biased preferences, information and transport costs. The paper shows clearly the importance of business networks relative to social networks as drivers of trade. Both have a positive and significant impact on trade flows, with firm networks multiplying trade flows by four and migrants stocks by two.

³⁷Although the export effect is found significant across countries this is not true for the import effect.

³⁸They distinguish between immigrants from Commonwealth and those from non-Commonwealth countries. The second group has a significant enhancing effect on exports, whereas the first does not, with a positive impact on imports for the second group and a negative one for the first. They base their explanation for the different results on the information and knowledge hypothesis. They argue that the impact of Commonwealth immigrants may be null or negative because these people bring no additional information about their home countries.

³⁹In their modified gravity model, imports and exports are functions of per capita income and population in the source country, US per capita income, the US population, the distance between the two countries, the migrant stock from country *j*, an English language dummy, a relative income indicator, the US terms of trade, a dummy for the recession years and time dummies. The estimated coefficient on imports is 2.5 times that on exports.

⁴⁰The impact of Chinese networks seems more important for heterogeneous commodities, which the authors interpret as evidence that the networks-information channel is more important than the contract-enforcement one, which should be similar in the two types of commodities. The very large estimated coefficients, however, cast some doubt on the data quality, possible measurement error or unobserved factors.

V. FDI AND MIGRATION

Migration Influences FDI through Information Transmission and Contract Enforcement

Migrants invest in their home countries because they have better information on business opportunities as well as contacts and knowledge that facilitate the investment process. Moreover, investment requires not only knowledge of local markets, but also intermediaries as key facilitators in investment decisions and their implementation. Migrants and return migrants play this role, often successfully (Saxenian, 1999). Saxenian notes that this need may be greater in industries using high technology and where markets are dynamic and constantly changing. His evidence is anecdotal, however. Very little empirical evidence exists on the impact of migration on FDI.

The potential impact resembles that of migration on trade. It most likely works *via* migrants' access to information otherwise difficult to get about local markets and market potentials. Familiarity with local customs and laws and the language facilitate communication and business creation. Knowledge networks and technology transfer represent potential links, but again they have not had much empirical testing. Most of the brain-drain studies, which might have some bearing, concentrate on high-tech industries and thus have doubtful relevance for the FDI role of migrants from low-income countries. Lower reputation barriers for migrants in doing business with home-country firms could be another linking factor. Studies have also stressed the role of diasporas⁴¹, the most commonly cited example being the Chinese Diaspora (see Mody *et al.*, 2003). A growing literature discusses the creation of new businesses by return migrants (Whaba, 2004; Dustmann and Kirchkamp, 2002; and Mesnard and Ravallion, 2001).

Enlarged Demand for Unskilled Labour through FDI May Reduce Migration Pressure

The expected impact of FDI on migration operates through the labour market and the effect of FDI on growth. Capital flows to developing countries abundant in unskilled labour should create more demand for such labour and higher employment for this group of workers. This is most likely to prevail in countries with large outflows of unskilled migrants, but it is only a first step. It does not automatically imply reduced migration pressure. It is necessary to know whether higher employment opportunities translate into lower migration incentives. The type of employment created (skilled or unskilled) should matter, but other factors can intervene. The

⁴¹ Nonetheless diasporas are second-generation migrants and thus it is not straightforward that they indeed constitute a migrant population.

potential effects may differ not only with country characteristics, but also with migration trajectories, history or traditions. A review of the link between FDI and growth is outside the scope of this paper, but keep in mind that even if one assumes that FDI increases sending-country growth, this does not necessarily imply that migration pressure will decrease.

VI. CONCLUSIONS

A broad range of migration policies have been either implemented in some countries or discussed by policy makers and scholars. For the developed countries they include policies that attempt to control migration either using residence permits, work permits and visas or employing more active measures like border enforcement controls (e.g. the US-Mexican border). Developed countries also have policies to attract skilled workers in specific sectors such as education, health or ICT (e.g. the US H1-B visas and Indian IT workers in the UK). At the other end of the migration spectrum, three main types of policies have been suggested and discussed for developing countries. The first tries to make remittances more productive. The second strives to make return migration more productive. The third targets the retention of highly skilled workers. A possible but diffuse fourth group includes more specific labour-market policies.

The main discussions in the first category concern the actual use of remittances and policies that could direct them in productive and welfare-enhancing directions. A related issue involves policies to redirect public spending to areas not benefiting from remittances, thus promoting a more efficient allocation of public resources⁴². These policies often attempt to encourage specific forms of migration with different effects on the volume and duration of remittances and how they are used. Enhancing the role of migration in the development process requires a better understanding of migratory flows (Kapur, 2004). Moreover the regulation of informal intermediaries and that of the informal transfer system, as well the creation of a transparent international money-transfer system⁴³ with lower intermediary transaction costs appears important to achieve better remittance channelling.

⁴² In 2001 King Mohammed VI announced a new “global, coherent, integrated policy” to be more responsive to the Moroccan migrants’ community. This policy would favour the emergence of dynamic migrant elites in politics, the sciences, technology, sport and culture. Two foundations currently operate in Morocco for migration management. New mechanisms are directed towards strengthening the development impact of migrant remittances through productive investment. Both the French and the Dutch governments provide assistance programmes for return migrants. Yet very little is known about return migration in Morocco. Nyberg Sorensen suggests further research to answer questions about its types, long-term settlement, short-term returns and return and repatriation issues. Policies should try to create opportunities alternative to migration, taking into account labour surpluses in urban areas. Nyberg Sorensen also suggests the development of rural areas, arguing that given the Morocco’s comparative advantage in agriculture, the free trade agreement should lead to farm specialisation. For this to take place development assistance should be directed towards the enhancement of productive activities in agriculture and rural areas.

⁴³ See Wimaladharma *et al.* (2004) on regulation and changes of existing laws.

The objectives of policies targeting potential return migrants are twofold — first to make return more attractive and second to maximise the benefit from migrants' return. These goals suggest *a*) lowering the relative cost of capital with policies such as preferential access to imports of capital goods and raw materials for returning migrants who set up their own businesses (India) or establish themselves in under-developed areas (Pakistan); *b*) business training and counselling schemes for returning migrants; *c*) favourable wealth and income taxes, premium interest rates (India) and duty-free shops for returning migrants (the Philippines); and *d*) access to the best exchange rates to provide financial incentives for remittances prior to return. Hometown associations (e.g. Mexican migrants' associations in the USA) may also be useful in promoting infrastructure investment and other types of development finance. Policies to retain or stimulate the return of skilled labour represent a subset of these kinds of initiatives.

The bottom line is that although migration and especially remittances may have important roles to play in development they are not enough on their own. The lack of appropriate infrastructure and of aid to build up businesses and support superior workers severely impedes development. As a first step in many countries, important changes in the financial transfer system — for financial intermediaries as well as the credit markets — are crucial for the development-enhancing role of remittances.

One main objective of this paper was to review evaluations of implemented policies. Yet such evaluations are very rare and hard to conduct in a scientifically rigorous way. Further work is needed to identify studies using experimental evidence on the effectiveness of migration-related policies. Yet the studies may be rare because such policies are rare, even in countries for which out-migration is important. The interactions among the vectors of migration, aid, trade and investment are very complex. They are thus more likely to be multivariate rather than bivariate. Moreover, as the paper amply demonstrates, heterogeneity rules the outcomes across countries and world regions. No single theory can explain and no single policy can support any one result on migration. The migration-policy vector itself contains varied components. Using aggregate cross-country data hides some of the information embedded in them and thus makes analysis less robust. It also relies on measures of migration flows or stocks rather than direct measures of policy instruments. The "mapping" of such stocks or flows and policy instruments is not always perfect, and other factors may intervene to modify the links between the two. This reality highlights the need for country case studies investigating specific and content-relevant interactions. Country-specific studies will allow the investigation of the interactions in more detail and in very specific historical and geographical contexts. They also will provide a lens through which one can see exactly and in what circumstances various policies could be applied, with realistic evaluation of their expected effectiveness.

Given the variety in outcomes of migration and its interactions with the vectors of aid, investment and trade, the creation of a typology of countries could contribute to a fruitful discussion of the role of migration policy. This paper considers the over-arching objectives of policy making as income-poverty reduction, improvement in human-development indicators and economic growth. Such a typology would facilitate the integration of the findings and lessons from the case studies and provide some insights into the variety of outcomes. It will be

attempted at later stages of the Development Centre's policy coherence project with the country case studies as inputs.

Table 1. One Policy Vector Serving the Objectives of Another

	Aid: Growth and poverty reduction	Investment: Raising Returns to FDI	Migration: Reducing pressure on wages and unemployment	Trade: Raising returns to exporters and importers
Aid Policy		Promotes infrastructure and human-capital investment, raises return to FDI	Promotes employment in the sending country, reduces pressure on outflows	Promotes demand for rich-country exports
Foreign Investment Policy	Raises human and physical capital stock in the developing country		Raises demand for unskilled labour in the sending country (and hence reduces out-migration)	Raises export capacity of the poor country (if exports use unskilled labour intensively); could, however, raise cost of unskilled labour (codes of conduct)
Migration Policy	Encourages remittances, technology transfer, human-capital accumulation	Transmits information and encourages contract enforcement via diasporas		Encourages trade in both directions, through diasporas; can raise profits in exporting and importing firms that use unskilled labour
Trade Policy	Can increase rich-country demand for poor-country exports	Makes FDI linked to exports more attractive	By raising demand for unskilled labour, reduces out-migration pressure	

Table 2. A Cycle Model of Migration: Likely Impacts

	$\dot{Y} = \dot{L} + Y/\dot{N} + \dot{R}$					
	Growth = labour supply changes + productivity effects + transfer effects					
	Labour:	Productivity:	Transfers:	Growth:	Poverty	Inequality
	\dot{L}	Y/N	\dot{R}	\dot{Y}		
Exit Stage	<0	Decreasing (skill depletion)	0	≤ 0	>0	>0
Adjustment Stage	≤ 0	?	≥ 0	≤ 0	≥ 0	≥ 0
Consolidation Stage	≈ 0	>0	>0	>0	<0	<0 Poor households start transforming remittances into productive assets
Networking Stage	$=0$	>0 (Investment and improvements in human capital)	≥ 0	>0	<0	$<0?$
Repatriation Stage	>0	?	<0	?	Rising urban population, rising urban poverty?	

Source: Katseli *et al.*, 2006.

Table 3. Evidence of Multiplier Effects

Nature of Impact	Study Citations	Countries
Impact depends on supply response of local production	Lewis and Thorbecke (1992) Subramanian and Sadoulet (1990) Parikh and Thorbecke (1996)	Kenya India Pakistan
From construction booms	Burney (1989) Adelman and Taylor (1990)	Pakistan Mexico
Greater in countries that incorporate migration into macroeconomic planning and have adopted macro policies favouring market development		Korea and Thailand
Strong impact	Glytsos (1999)	Egypt and Jordan
Positive impact of remittances on employment and productivity, both directly and indirectly through investment	Léon-Ledesma and Piracha (2001)	Eastern European countries
Strong positive multiplier (x3)	Adelman and Taylor (1992)	Mexico, late 1980s
Substantial multiplier effects in rural commodities	Massey and Parrado (1998) and Massey <i>et al.</i> (1994)	Mexico
\$1 of remittances increases GDP by \$2.9 and economic output by \$3.2	Durand <i>et al.</i> (1996)	Mexico
Remittance multiplier of 1.78 for a Mexican village	Adelman, Taylor and Vogel (1988)	Mexico

Table A-1. A Summary of the Main Findings of Works Covered in the Literature Review

<i>Study</i>	<i>Findings</i>
A. Migration, Remittances and Development	
Gubert (2002)	The way remittances affect development depends on departure conditions, the size of migration flows and the level of income.
Taylor and Fletcher (2001)	Local market imperfections (absence of rural credit markets) may hinder the effect of remittances.
Adams and Page (2003)	A 10 per cent increase in migration reduces the population living on less than \$1 per day by 1.9 per cent (MENA).
Bourchechen (2000)	Remittances allow a large number of households to achieve decent incomes.
Nyberg Sorensen (2004)	Remittances reduced the number of people living in poverty by 1.2 million in Morocco.
Lachaud (1999)	Remittances received mostly by rural households headed by inactive persons or farmers.
Leliveld (1997) and Gustaffson and Makonnen (1993)	Remittances and migration have substantial effects on poverty reduction
Glytsos (1999)	Links hold between remittances, consumption, investment, imports and income. Strong income impact for Egypt and Jordan, but moderate for the rest of seven Mediterranean counties.
El Sakka and McNabb (1999)	Imports financed by remittances have high income elasticity and thus remittances may have low multiplier effects
Adelman and Taylor (1992)	Strong multiplier effect (x3 for Mexico, late 1980s).
Azam and Gubert (2002)	Families that receive remittances have lower returns to agriculture, Mali.
B. Income, Growth and Multiplier Effects	
Chami <i>et al.</i> (2003)	Negative coefficient of remittances in growth equation for 113 countries
Massey and Parrado (1994) and Massey <i>et al.</i> (1994)	This spending has substantial multiplier effects in rural communities (migradollar studies).
Adelman, Taylor and Vogel (1988)	Estimated remittances multiplier of 1.78 for Mexican villages.
Adelman and Taylor (1990)	Construction boom linked with higher investment and multiplier effects, Mexico.
Burney (1989)	Construction boom linked with higher investment and multiplier effects, Pakistan.
Nyberg Sorensen (2004)	Remittances support local economies and infrastructure development, Morocco.
Khachani (1998)	Investment for land exploitation using better technology and investments that promoted tourism, food processing and the supply of building materials, Morocco.
Durand and Massey (1992)	Heterogeneity in use of remittances, data from 37 Mexican communities.
Durand <i>et al.</i> (1996)	Presence of production co-operatives increased the likelihood of remittances being spent on productive activities. Data from 30 Mexican communities
Rozelle <i>et al.</i> (1999)	Negative impact of migration on rural China partly offset by remittances permitting access to capital. Remittances may have positive effects on production, but this is determined by third factors: credit, insurance and labour market imperfections.
Lucas (1987)	Migration reduces labour force and thus agricultural production in the short run. In the long run remittances help to improve productivity. Study on Malawi, Botswana, Lesotho, Mozambique and the homelands of South Africa.
Mochebelele and Winter- Nelson (2000)	Households that received remittances had less technological inefficiency, Lesotho.
Léon-Ledesma and Pirasha (2001)	Positive impact of remittances on employment and productivity (direct and indirect through investment). Positive link between remittances and consumption and investment. Data for Eastern European countries

C. Inequality

Munshi (2003)	Migration is a diffusion process with declining information cost and thus the impact of remittances may change with time.
Stark (1978)	Philippines: migration is initially inequality-neutral. Mexico: first an increase and then a decline.
Adams (1989)	Egypt: positive impact of remittances on inequality. Pakistan: neutral impact.
Barham and Boucher (1998)	Negative correlation when domestic income source are treated as exogenous, positive if migration and domestic labour participation are treated as endogenous. A small coastal town, Nicaragua.
Taylor (1992)	Inequality goes up initially but in the long run it goes down as poor households transform remittances into productive assets. Panel data from Mexico.
Mesnard (2001)	Inequality may increase in the short run but will decline in the long run. Even small flows may help to move from stagnation to development. The intergenerational nature of remittances leads to higher prosperity even in the presence of liquidity constraints impeding human capital investment or capital market imperfections (Overlapping Generations model).
Stark <i>et al.</i> (1986)	Remittances increased inequality in a village with short history of migration but reduced it in one with a long history; Mexico.
Lucas (2004)	Intra-household inequality may decline with remittances and migration: changing position of women in the household, more independence, etc.
Glytsos (2002)	Remittances may increase the independence of women and thus affect fertility, labour supply and demographics.
Leichtman (2002)	Changes in family structure, independence of women and young family members.

D. Social Protection, Insurance, New Business Start-ups

Stark and Lucas (1988) and Lucas and Stark (1985)	Evidence of risk diversification: remittances increase after a dry season for families whose productive activities depend on rainfall.
Gubert (2002)	Estimates transfer functions to find a positive correlation between the amount of remittances received and three types of shocks.(Region of Kayes in Mali)'.
Schrieder and Knerr (2000)	Remittances can serve as only an imperfect insurance mechanism, Cameroon
Mesnard (1999)	Self-employed return migrants accumulate twice as much as salaried migrants. Savings accumulated abroad solve liquidity constraints for the self-employed, Tunisia.
Dustmann and Kirchkamp (2002)	50 per cent of return migrants by 1984 started their own businesses, Turkey.
Woodruff and Zenteno (2001)	Remittances represent an important source of finance for investment in micro-enterprises, Urban Mexico.
Mesnard and Ravallion (2001)	Savings accumulated abroad of great importance in explaining business start-ups by return migrants, Tunisia.
Leichtman (2002)	Remittances led mostly to an increase in small and medium-sized business start-ups rather than agricultural expansion, Morocco.
Whaba (2004)	Entrepreneurial skills, new skills and work experience acquired abroad. 10 per cent of returnees used their savings to finance economic projects. More educated migrants tend to benefit more from their stays abroad, Egypt.

E. Human Capital (Brain Drain and Human Capital Transfers)

Mountford (1997)	Growth externality when past-period proportion of educated determines current productivity. Need assumption that not all educated people will leave the country
Beine <i>et al.</i> (2001, 2003)	Education classes are endogenous (uncertainty about migration)
Carrington and Detragiache (1999)	Negative impact of skilled migration on human capital of the sending country.

Initial models of brain drain (such as Bhagwati and Hamada, 1974)	General equilibrium models. Notion of ladder effect: skilled workers who do not migrate are better matched to skilled (rather than unskilled jobs), which may help to decrease unskilled unemployment (more jobs available for them)
Vidal (1998)	Intergenerational transmission of skills and education
Guilmoto and Sandron (2003)	Social change in country of origin following migration.
Hanson and Woodruff (2002)	Children in households of migrants received on average 0.7 to 1.6 more years of schooling.
Cox <i>et al.</i> (2003)	Remittances contribute to lowering the hazard of leaving school, El Salvador.

F. Aid and Migration

Faini and Venturini (1993)	Migration hump. Evidence of negative relationship between migration and development for Greece, Portugal and Turkey but not for Italy and Spain.
Griswold (2003)	When conditions in home country improve, propensity to migrate may increase because remittances would be more beneficial.
Cogneau and Gubert (2005)	Why do most migrants come from countries (or regions) which are not the poorest? Explanations for regional differences within a country as well as inter-country differences in migration-poverty patterns; Mexico and Mali.
Lucas (2004)	Study whether ODA flows were mainly concentrated on migrant-sending countries.
Stalker (2000)	Correlation is due to colonial ties.

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