Arslan, Aslıhan; Effenberger, Alexandra; Luecke, Matthias; Omar Mahmoud, Toman

Research Report

International labor migration and remittances beyond the crisis: Towards development-friendly migration policies

Kiel Policy Brief, No. 10

Provided in Cooperation with:
Kiel Institute for the World Economy (IfW)

Suggested Citation: Arslan, Aslıhan; Effenberger, Alexandra; Luecke, Matthias; Omar Mahmoud, Toman (2009) : International labor migration and remittances beyond the crisis: Towards development-friendly migration policies, Kiel Policy Brief, No. 10, Kiel Institute for the World Economy (IfW), Kiel

This Version is available at:
http://hdl.handle.net/10419/32851

Terms of use:
Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.
International Labor Migration and Remittances Beyond the Crisis: Towards Development-friendly Migration Policies

A. Arslan, A. Effenberger, M. Luecke, T. Omar Mahmoud

No. 10 | October 2009
Over the last two decades, remittances by migrant workers to their families have become an important source of household incomes in many developing countries. At the economy-wide level, remittances have sustained demand for local goods and services and contributed to economic growth and poverty reduction. Unsurprisingly, in the current global recession, employment opportunities and earnings of migrant workers have suffered – not least because some important destination countries for migrant workers, including Russia, the United States, and Spain, have been hit particularly hard by the global crisis. Many destination countries have adopted policies to discourage further immigration and even push out those immigrants already in the country. Such protectionist policies threaten to undo the benefits that international labor migration has brought to both, home and destination countries.

In this Policy Brief, we assess the extent of the decline in remittances and its impact on developing countries and review initial policy responses. On this basis, we propose policies for destination and home countries that take into account the long-term benefits of international labor migration particularly for migrants and their home countries. We argue that protectionist policies that shift the burden of adjustment onto labor migrants and their home countries are inappropriate and ultimately self-defeating in an increasingly interdependent world. Rather, host country governments should adopt a long-term perspective and gradually expand opportunities for international labor migration, not limited to high-skilled workers.

Migrant Remittances and Economic Development

World-wide, remittances have become a key financial flow to developing countries, rising from US$ 31 billion in 1990 to US$ 251 billion in 2007 (Figure 1). Remittances are now more than twice as large as total official development assistance to developing countries and a much more stable source of external finance over the years than direct or portfolio investment.

In many developing countries, remittances have become a crucial source of income for many households (Figure 2). While large countries such as China and India top the list of recipients in terms of the value of remittances, small economies such as Tajikistan, Moldova, or Jordan display a particularly large ratio of remittances relative to GDP. Migrant remittances are difficult to estimate because a significant proportion is transmitted through informal channels like bus or lorry drivers or relatives, rather than through the banking system. Therefore, the data underlying Figures 1 and 2 probably represent the lower bound of plausible estimates of migrant remittances.

The main source countries of remittances (and destination countries for migrants) are high-income countries like the United States and several EU member states, along with Saudi Arabia and Russia (Figure 3). Although regionally disaggregated data on remittances are very limited, we can identify some important migration corridors. The United States is the main destination country for Mexican, other Central American, and many Indian migrants. Russia is temporary home to nearly all Tajik migrants as well as many Moldovans and Kyrgyz. Saudi Arabia and other Gulf countries host migrants from India, Pakistan and oil-poor Arab countries. Western Europe is a popular destination for migrants from North Africa and Turkey and increasingly from Eastern Europe.
Research on the impact of international labor migration and remittances on migrants’ home countries confirms the strong positive impact of remittances not only on recipient households, but also at the economy-wide level. International labor migration implies that workers move from an economy where their productivity is low to one where it is high. Clearly, therefore, migrant workers and those with whom they share their additional income will benefit. While it is difficult to identify how additional household income is spent, studies for several high-emigration countries document higher consumption of food and consumer durables as well as investments in family enterprises and in human capital, such as health care and education. When barriers to migration are not high and migration is therefore not too costly, it may also help to reduce poverty in migrants’ countries of origin. When barriers are high, for example because migration is illegal and facilitated by organized groups, the poorest households may be excluded from the migration process.

Beyond household-level effects, migrant remittances and higher disposable incomes generate additional demand for local goods and services as well as for imports. In many high-emigration countries, therefore, GDP (i.e. local output) has grown even as labor migrants left and the labor force declined; the economic recovery in many countries of the former Soviet Union since 2000 is a prominent example. At the same time, rising imports have boosted tax revenues (mostly value added tax, but also import duties) and have thus helped to stabilize government expenditures, including on social transfers and services for the poor. Therefore, when migration is large enough, the beneficial effects extend far beyond remittance-receiving households.

There is some concern that emigration of high-skilled workers would deprive developing countries of human resources crucial for their economic development. While plausible, empirical evidence for negative brain-drain effects is limited. In some cases, high-skilled workers might not find appropriate employment at home; for example, health care may be particularly poor in the countryside, but without a functioning hospital infrastructure, physicians and nurses would not remain in the countryside in any case. Furthermore, if emigration opportunities are better for more skilled workers, that may create a powerful incentive for people to acquire more skills – which may ultimately improve the skill level even of those workers who remain in the country (Beine, Docquier, Rapoport 2008). Last but not least, remittances often pay for skill acquisition by family members, such as extended school attendance or further education.

While labor migration has clear economic benefits for migrants, their families, and their home countries, its effects on host country natives are more mixed. Local output will increase, but most of the extra output will go to immigrants themselves. Those groups of local workers who most resemble migrants in terms of skills and work experience are likely to lose because of greater competition in their labor market segments. Other workers with complementary skills may benefit, as may consumers who gain access to services (for example, long-term care at home) that they could not otherwise afford. Similarly, owners of scarce local resources like housing may enjoy higher incomes (Ortega, Peri, 2009; Borjas, 2009; Ottaviano, Peri, 2008). The fiscal effects of immigration may be positive if immigrants are mostly young, legally employed, pay taxes and social insurance contributions, and have few dependents; or negative if immigrants face high unemployment rates and have access to social services. In ageing societies, immigration may soften the trend towards a lower total population, higher average age, and higher dependency ratios. On the whole, the effects on host country natives tend to be small in relation both to host country GDP and to the clear benefits of migration for migrants and their countries of origin.
Therefore, the argument has recently gained ground that immigration policy in high-income countries should take into account its impact on (current and potential) migrants and on individuals in developing countries generally. At present, the coincidence of where a person happens to have been born (for example, in a high-income vs. a low-income country) has a much greater impact on their material well-being than factors such as gender, skin color or handicap, although possible discrimination against individuals based on the latter factors attracts much more attention (Clemens, Montenegro, Pritchett, 2008). The current global recession is hitting not only many important host countries of labor migrants, but also their countries of origin. If rich host countries were to attempt to shut out migrants, migrants and their families would face extra hardship because they would not easily find alternative employment opportunities at home. Arguably, also, even a cautious opening of rich-country labor markets to immigrants from developing countries would reduce poverty in developing countries more effectively than much current development assistance. Thus, immigration and development policies are closely intertwined and need to be considered in context, as we discuss further below in more detail.

The Impact of the Global Recession on Migration and Remittances

The global financial crisis and the subsequent recession have simultaneously afflicted destination and home countries of labor migrants. Both deteriorating labor market conditions in destination countries and the economic slowdown in many home countries will shape migration flows in the short to medium run. However, the long-run drivers of migration flows are unlikely to be weakened by the crisis: The persisting wage differentials and demographic imbalances between destination and home countries are too large to be fundamentally affected (see Box 1).

So far, the economic slowdown has been particularly marked in developed countries, including several key destination countries of labor migrants. As a result, unemployment rates have increased sharply in several countries. Despite tentative signs that the downturn may be coming to an end, the lagged response of labor markets to GDP growth rates suggests that unemployment may increase yet further. The OECD (2009) reckons that the number of unemployed in the OECD will rise from 34 million in 2008 to more than 56 million in 2010.

The crisis is hitting migrants particularly hard. Compared to the native-born population, they have been experiencing more job losses both in absolute and relative terms. In the US, for instance, the number of immigrant workers has decreased by about 9 percent since the third quarter of 2009, while the corresponding decline for native workers is about 4 percent (Camarota, Jensenius, 2009). Immigrants are more vulnerable than natives because they tend to work in sectors which are more responsive to the business cycle, above all construction and manufacturing, and typically have less permanent employment contracts. In addition, they are more likely to be disadvantaged through selective layoffs and hiring. At the same time, however, some immigrants hold jobs in sectors which are relatively resilient to the economic downturn. These activities include social services, food-processing, and cleaning (OECD 2009). Thus, a sizeable portion of migrant workers may not be severely affected by the crisis.
In most destination countries, decreasing demand for migrant labor has not yet resulted in a significant outflow of immigrants to their home countries. Depending on how long they expect the recession to last, some migrants may try to stay put, relying on savings or engaging in more irregular and temporary activities. Return migration is also unlikely to be an option for long-settled immigrants, especially for those who have already brought their families with them. In contrast, other migrants, above all temporary migrants, may find it a more viable strategy to return to their families. It remains to be seen, however, whether labor markets in origin countries can absorb significant numbers of returnees. After all, economic activities are also slowing down in many major origin countries (Figure 4), such as Mexico or

---

**Box 1. Determinants of international labor migration and the effects of the global recession**

The reasons behind labor movements between sectors and countries have long been discussed by economists. Neo-classical models of labor movements posit that people migrate due to wage differentials between sectors and predict that wage differentials would be eliminated over time (Ranis and Fei, 1961). These models assume perfect markets and fail to explain persistent wage differentials and unemployment. Todaro’s extended model achieves this by assuming that the only determinant of migration decisions is expected income, however, it fails to account for the role of human capital in driving migration (Todaro, 1969). The human capital theory of migration deals with this shortcoming by accounting for the role of individual's skills in determining productivity, wages and costs of migration based on Mincerian wage models. Most of these models treat migration as an individual decision; therefore, they cannot explain the existence of continuing interactions of migrants with their origins and the flow of remittances that play an important role in poverty reduction and rural development (Taylor and Martin, 2001). The New Economics of Labor Migration (NELM) posits that the migration decision is part of a household strategy rather than being purely individual and that multiple market failures – in particular capital and insurance – drive migration (Stark and Bloom, 1985; Stark, 1991). Under imperfect credit markets, remittances may relax the capital constraint and allow households to invest in their farms or businesses. If insurance markets are also missing and there is income uncertainty as is common in agriculture, migration may also serve as an income diversification strategy for the household.

<table>
<thead>
<tr>
<th>Push Factors</th>
<th>Pull Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wage differentials between countries</td>
<td>Demand for labor</td>
</tr>
<tr>
<td>Lack of employment opportunities</td>
<td>Education</td>
</tr>
<tr>
<td>Imperfect credit and/or insurance markets</td>
<td>Lax anti-immigration laws</td>
</tr>
<tr>
<td>Demographic factors</td>
<td>Demographic factors</td>
</tr>
<tr>
<td>Political/religious prosecution</td>
<td>More political/economic freedoms</td>
</tr>
<tr>
<td>Natural disasters</td>
<td>Better public services</td>
</tr>
<tr>
<td>Natural resource degradation</td>
<td>Family reunion</td>
</tr>
</tbody>
</table>

These factors can be grouped under “push” and “pull” factors, which are, respectively, unfavorable conditions in the origin location and favorable conditions in the destination location (Ravenstein, 1889). The financial crisis affects some of these factors in different ways, while leaving most of them unaffected. The most important and direct effect of the crisis is through its effects on the demand for labor. As the global economy slows, the demand for labor decreases in the short run especially in sectors that employ most migrants, such as construction and manufacturing. Contracting budgets in host countries that are hit by the crisis may also affect the funds available for education, increasing the costs of education for potential migrants. Another pull factor affected by the crisis is the anti-immigration laws. The increasing protectionist sentiment in destination countries is likely to decrease migration flows marginally in the short run.

The push factors, however, are mostly not affected by the crisis and some may even be exacerbated. Large wage differentials, scarce employment opportunities and imperfections in financial markets are likely to persist, if not worsen, in origin countries. When economic growth in host countries resumes after the financial crisis, the pull factors will once again come into play adding to the already strong push factors. In light of these considerations, we predict that short sighted nationalist policies to stop migration flows are unlikely to make a significant effect on the global migration patterns in the long run.

In most destination countries, decreasing demand for migrant labor has not yet resulted in a significant outflow of immigrants to their home countries. Depending on how long they expect the recession to last, some migrants may try to stay put, relying on savings or engaging in more irregular and temporary activities. Return migration is also unlikely to be an option for long-settled immigrants, especially for those who have already brought their families with them. In contrast, other migrants, above all temporary migrants, may find it a more viable strategy to return to their families. It remains to be seen, however, whether labor markets in origin countries can absorb significant numbers of returnees. After all, economic activities are also slowing down in many major origin countries (Figure 4), such as Mexico or
Romania. Under such circumstances, return migrants might even hamper the economic recovery of their home countries.

While the crisis may induce only a limited amount of return migration, dire job prospects abroad will almost certainly delay or halt outmigration plans of many potential migrants. Thus, the level of the migrant population may stabilize in the short to medium run. Once the global economy picks up again, outmigration rates will follow suit.

The effects of the severe economic crisis in destination countries are felt not only by (potential) migrants, but also by their families back home. Reduced and uncertain employment and earning opportunities have already caused a sharp reduction in remittance flows to many origin countries of migrants (Figure 5). Countries like India, Poland and Moldova have seen their remittances fall by more than 20 percent. The World Bank (2009) predicts that total remittances to developing countries will decline by 7-10% in 2009 and may stabilize in 2010. With the likely return of many of their temporary migrants from Russia, Eastern Europe and Central Asia are expecting the largest decrease in remittances among all developing regions (see Box 2).

Less income from remittances and in some cases the reintegration of former family members may significantly diminish migrant families’ welfare, pushing some of them below the poverty line. The resulting decline in remittances-driven consumption will also have macroeconomic repercussions. This puts additional strain on many developing countries, where the economic crisis is already expected to add 64 million people to the population living under US$ 2 a day (Chen, Ravallion, 2009). Such unfavorable conditions in origin countries may ultimately even strengthen the push factors of migration to seek better opportunities abroad (Box 1).

As the global recession weakens pull factors while strengthening push factors, it is difficult to predict how migration flows will change on balance. In the case of the US-Mexico migration corridor, underlying demographic factors, particularly the difference in labor supply between Mexico and the US, have been shown to play a dominant role (Hanson and McIntosh, 2009). The predominance of demographic factors, which are unaffected by the recession, leads to an inertia in migration dynamics such that the GDP contraction in the US and Mexico will probably not affect migration rates significantly (Taylor 2008; Richter et al. 2006).
These insights demonstrate that the economic crisis will probably have only limited and temporary effects on international migration flows. Therefore, a hasty reorientation of migration policies in response to the crisis would not be appropriate. Even in times of economic slowdown, policies should adopt a long-run view to successfully manage labor migration.

**Policies for International Labor Migration**

In many host countries, the immediate response of immigration policy to the global economic crisis has been defensive, further tightening access to host country labor markets. Borders have been fortified further (US-Mexico), issuance of visas and work permits has been stopped or restricted (Malaysia, Thailand), quotas for skilled migrants have been limited (Australia, Italy, Kazakhstan, Russia), and migrants have been offered financial incentives to return home, on the condition that they would not return to the host country for a given period (Spain, Czech Republic, Japan; IOM, 2009b).

Many such immediate responses are perceived as less than successful. The number of illegal immigrants residing in the US has reportedly declined by 13% since 2007, mainly because of increased enforcement that started even before the crisis (Camarota, Jensenius, 2009). However, this decline may be short-lived. Tighter border controls coupled with increasing unemployment both in the US and Mexico may cause illegal immigrants already in the US to stay put, rather than return home for extended stays (as they did in the past). Similarly, few immigrants have taken up financial incentives on offer in several countries that would oblige them to return home for an indefinite (or at least prolonged) period. The program in the Czech Republic has been relatively successful in enticing workers to go home; 1,345 (mainly Mongolian) workers applied compared with the targeted 2,000.1

---

However, similar programs in Spain and Japan had scant uptake: these countries aimed to have 100,000 and 200,000 applications, but only had 4,000 and 360 applicants as of April, respectively.

More fundamentally, it is apparent in many areas, from international trade policy to financial services regulation, that national responses to a global crisis are ineffective unless

In order to fully account for the consequences of unemployment among foreign workers, it is important to also focus on migrants' families back home. Remittances received from relatives working in Russia are an important income source for many countries of the former Soviet Union. As an example, for 60% of remittance-receiving households in Moldova, these money transfers finance more than half of their current expenditure (Luecke, Omar Mahmoud, Pinger, 2007). While most of the additional income is spent on daily needs, some amount is also allocated to consumer durables and larger household investments.

With the decline in economic activity and rising migrant unemployment in Russia, remittances have fallen. In the first quarter of 2009, total outflows from Russia to CIS countries declined by 31% year-on-year (World Bank, forthcoming). During the same period, incoming remittances declined by 39% in Tajikistan and by 35% in Moldova, tracking closely the worsening situation of the Russian construction sector.

Remittances are large in relation to GDP in many CIS countries; for example, inflows in 2007 amounted to 46% of GDP in Tajikistan and 34% in Moldova in 2007 (World Bank, 2009). Therefore, the decline in remittances tends to affect economic welfare substantially. As estimated by the World Bank (forthcoming), a 50% decline in remittances would increase the poverty rate of Tajikistan by up to 7 percentage points.

Migrants in Russia are not only losing their jobs, but are also facing an growing anti-migration sentiment. To protect national workers, the Russian government cut its quota for new migrants in 2009 (IOM, 2009). Moreover, some employers abuse foreign workers by not paying them their salaries (ILO, 2009c). Immigrants also seem to suffer from increased violence and xenophobia since the beginning of the financial crisis; twice as many migrants were murdered in 2008 compared with the previous year (ILO, 2009c).

However, similar programs in Spain and Japan had scant uptake: these countries aimed to have 100,000 and 200,000 applications, but only had 4,000 and 360 applicants as of April, respectively.

More fundamentally, it is apparent in many areas, from international trade policy to financial services regulation, that national responses to a global crisis are ineffective unless
they are at least carefully coordinated. Pushing labor migrants to return home under current conditions would not only create hardship for many migrants and their families, but would also deprive their home countries of a crucial inflow of capital and source of domestic demand. Protectionist responses in immigration policy essentially seek to shift adjustment costs to individuals and countries that are even less well placed to shoulder the burden. This approach not only contradicts global development goals such as poverty reduction that all UN member states have agreed to in the 2001 United Nations Millennium Declaration. Protectionism is also shortsighted because in a globalizing world one country cannot lastingly enhance its own wellbeing through policies that impair the welfare of others.

Therefore, immigration policy, even during a global recession, should follow a long-term strategic focus on the potential contribution of international labor migration to poverty reduction and economic growth in the developing world. This approach calls for policies that (i) create additional opportunities for labor migration, not limited to high-skilled individuals; and (ii) are politically feasible in high-income host countries because they demonstrably generate positive net benefits for host-country natives. While the circumstances of individual host countries differ, the general thrust should be clear: International labor migration is already a key element in the ongoing integration of national economies. It benefits individuals in developing countries of origin without serious negative side-effects in host countries. Its expansion would not only be in line with global development policy goals, but also with the properly understood self-interest of high-income host countries in growing prosperity in their global neighborhood.

The following guidelines may be helpful in designing appropriate policies:

1. **Expand temporary work programs for low-to-medium skilled workers.**

   Programs could be targeted to occupations or labor market segments where immigrants will compete less intensely with host country residents. Migrants would be obliged to return home after a set period; therefore, their access to host country social transfers could be limited and their social security contributions (except for health insurance) could be channeled to home country social security systems. Temporary work programs would typically be based on bilateral agreements between home and host countries. While such programs have not been trouble-free in the past, they would expand legal migration without running into the sort of political resistance that permanent immigration faces, especially during a pronounced economic downturn.

2. **Improve integration of immigrants in all spheres of host countries’ societies.**

   In many host country labor markets, immigrants still face outright discrimination and school achievements for immigrant children also lag behind natives. As a result, many immigrant children are growing up in relative deprivation and without positive role models of adults who are economically successful and socially integrated. Better integration of immigrants in labor markets and education systems would reduce the fiscal cost of immigration in terms of current and future social transfers. Efforts by a wide variety of actors would be helpful, from business associations promoting equal-opportunity hiring practices to NGOs facilitating migrants’ access to public healthcare and schools offering language training to ensure that migrant children are literate in both their native and host country languages. At the same time, it is appropriate for host countries to require new
immigrants to make an up-front effort towards integration, for example by learning the language of the host country.

3. Offer continuous regularization for long-term irregular immigrants.

Some host countries have long tolerated a large amount of illegal immigration, to the point where irregular migrants have access to public services like health care and schooling without fear of deportation. While this approach is admirable on humanitarian grounds, such irregular immigrants are still unable to obtain legal employment and are thus susceptible to exploitative work practices and de-facto travel restrictions which make it difficult for them to maintain contact with their families at home. Where irregular migration is widely tolerated, the current practice of large, but infrequent and politically controversial regularization campaigns should be replaced with a continuous regularization process for long-term irregular immigrants with clean criminal records and employment histories.

4. Manage high-skilled migration.

Many high-income countries allow permanent immigration by high-skilled workers from anywhere in the world, based on a minimum salary to be guaranteed by the prospective employer, previous study at a host country university, or a points system that takes into account a large number of skills and family characteristics. Such transparent provisions should be encouraged and extended. High-skilled immigrants may increase the productivity of resident workers while creating only limited distributional conflicts and can improve the net impact of immigration on the skill level of the host country labor force. At the same time, however, selective immigration policies may lead to brain drain in some emigration countries. To cushion these adverse effects, an international and flexible code of conduct should be implemented to control the active international recruitment of skilled workers in critical sectors such as health care. In addition, social security contributions in host countries should be made portable so that high-skilled emigrants are not discouraged from taking up economic opportunities in their home countries.

5. Support migrants through information, job placement, training, and protection from abuse

International migration involves a variety of risks related to travel, residence in the host country, and employment. These risks may be compounded in the case of irregular migration which is wide-spread in many migration corridors. Home and host countries should cooperate to provide full information to potential migrants about migration options and where to obtain assistance in cases of abuse, etc. Home countries should facilitate job placement for work abroad, be it through governmental or private agencies, and ensure that education systems provide necessary skills for work abroad, such as foreign languages. When the departure of high-skilled individuals threatens to lead to a brain drain from the home country, home countries and donors may cooperate to provide vocational training to replenish the pool of skilled workers.

6. Systematically integrate Diasporas in the development process of their home countries.

Many migrants maintain close links to their home countries by sending remittances, travelling, voting in elections, etc. These links should be supported and harnessed for
home countries’ economic development. Such policies are especially relevant for (temporary) migrants who reside in the host countries for economic reasons, but ultimately plan to return to their home countries. For example, existing social investment funds demonstrate how migrants can be encouraged to contribute to communal development at home, with funds from the government or donors matching the contributions of migrants.

7. **Facilitate return migration where appropriate.**

Some countries with historically large out-migration have subsequently experienced rapid economic development. Over time, higher incomes have slowed out-migration and even led to substantial return migration (e.g. Ireland, Poland). If such return migration is accelerated by the current recession, some support for re-integration into the labor market at home may be appropriate, for example through job placement offers that target labor migrants abroad. Elsewhere, the jobs held by labor migrants abroad may simply have disappeared (as in the construction industry in Russia) and return migration may be a necessity rather than a choice. For such countries, short-term employment programs funded by the government or donors may be appropriate, particularly if migrants have acquired skills (for example, in the construction industry) that can be used productively in public works.

**References**


Imprint

Publisher: Kiel Institute for the World Economy
Duesternbrooker Weg 120
D – 24105 Kiel
Phone +49 (431) 8814-1
Fax +49 (431) 8814-500

Editorial team: Rita Halbfas
Helga Huss
Prof. Dr. Henning Klodt
(responsible for content, pursuant to § 6 MDStV)
Dieter Stribny

The Kiel Institute for the World Economy is a foundation under public law of the State of
Schleswig-Holstein, having legal capacity.
Sales tax identification number DE 811268087.
President: Prof. Dennis Snower, Ph.D.
Vice President: Prof. Dr. Rolf J. Langhammer

Supervisory authority: Schleswig-Holstein Ministry of Science,
Economic Affairs and Transport

© 2009 The Kiel Institute for the World Economy. All rights reserved.