Remittances and Migration

As the world has become more globalized and international labor more mobile, the improved ability of a nation’s workers to migrate to more developed areas and remit their wages to their home countries has led to a substantial increase in the practice. The extent of remittances, however, can be sensitive to a number of issues related to the economies of both countries as well as the rate of acculturation.

In PERC Working Paper 1301, Jordan Professor of Economics Dennis Jansen and Diego Vacaflores explore how remittance levels are affected by the countries involved using an economic model that endogenizes labor allocation between the native and foreign markets. They investigate the dynamic and equilibrium consequences of monetary and technological shocks on the economy of the native country.

From 1999-2008, the level of remittances increased from $5 billion to nearly $70 billion dollars. In some countries, remittances make up more than 10% of GDP. Several reasons have been proposed to explain the trend: lower transfer costs, better data collection, and an increase in migration.

Past empirical research has focused on how remittances directly affect the economic parameters—especially the standard of living—of the native country. The theoretical research points out that this type of labor migration can have both positive and negative impacts. By migrating, the native country loses part of its workforce (and possibly a more productive segment of its workforce).

To determine the magnitudes of these countervailing forces, Jansen and Vacaflores develop a limited participation model in which each household determines how much labor to allocate domestically and abroad and then how to allocate the earnings.

Previous microeconomists have studied both the decision to send remittances as well as how households employ them while macroeconomists have focused on the effects on economic aggregates such as GDP and inflation. Economists have reached conflicting conclusions as to whether remittances improve the welfare of the native countries. A shortcoming of the previous literature is that it treats the migration decision as exogenous, leading the native population to treat increased remittances as a gift. This increase in income leads those who stay to increase their leisure time.

To properly reflect the apparent costs of migration, the authors include frictions such as a cost to transfer money, a migration delay, and unity utility that rewards keeping a family together. Additionally, the model includes an assimilation parameter because as emigrants assimilate into the new culture, they become less likely to remit their wages. They fill out the model with firms to employ the workers and a central bank to control the money supply.

They find that as the rate of assimilation increases, more labor is allocated to the foreign market. This, in turn, leads to less labor and higher wages in the domestic market. To make up for the reduced domestic labor, the stock of capital increases. The emigrant increases his labor effort and his remittances. Somewhat counter-intuitively, they find that the faster emigrants assimilate into the foreign culture, the higher the household consumption and the higher the utility for the individuals despite the decrease in leisure and family unity.

Reducing the cost of living in the foreign country reduces the amount of labor allocated to the foreign market in anticipation of the increased remittances, although the net level of remittances falls because the decrease in the number of workers offsets the increase in remittances per worker. Together with increases in investment and physical capital,
the increase in domestic labor causes output per capita to increase and real wages to decline. The net effect, then, is an increase in consumption, leisure, and per capita utility.

Finally, the authors investigate how their model dynamically responds to monetary and technology shocks. Primarily, they look at the effects on output, consumption, migration, and remittances, but they also analyze the consequent welfare.

An increase in the rate of money growth causes short term changes in the four primary statistics, but in the long-term all return to their previous values. An increase in the productivity of capital causes foreign workers to return home and an immediate rise in output consumption, which steadily declines back to the original steady state values.

In today’s more globalized environment, international allocation of labor has become prevalent. Remittances represent a significant and growing share of many nations’ GDP. It is therefore important to understand how households decide to allocate their labor across borders. Jansen and VacaFlores have presented a model to help elucidate some of these issues and have taken the first steps to study that model. Their results imply that the foreign nation one chooses can be just as important as the decision to work abroad. Undoubtedly, the complexities of the decision leave ample opportunity for further research.

### Market Anomalies or Costs of Risk

The capital asset pricing model (CAPM) is one of the cornerstones of modern finance and is widely used in risk analysis, performance measurement, cost-of-capital calculations, etc. However, the single market-factor model cannot explain many return anomalies. For example, a zero-cost portfolio investment strategy that is long on low investment stocks and short on high investment stocks generated an average annual return of 5.93% during 1972-2010 (the market return rate was 10.99%). Similarly, a zero-cost portfolio investment strategy that is long on stocks with high return-on-equity and short on stocks with low return-on-equity generated an even higher average annual return of 8.33%.

There has been considerable controversy over the source and the nature of these two types of return anomalies. Do they derive from investors’ behavior bias and the market’s mispricing? If this is the case, the anomalies are likely to disappear over time as more market participants become knowledgeable about them. Or, are they two new factors that are proxies for fundamental economic and financial risks? If the latter is the case, the return “anomalies” will persist because they are compensation for investors bearing risks that are not captured by the market risk factor.

In **PERC Working Paper 1207** (forthcoming in *Financial Management*), **PERC Research Scientist Zijun Wang sheds new light on the issue by first investigating the predictive power of the investment and return-on-equity return anomalies (or factors) for future GDP growth. He finds that the investment factor has significant predictive power even if he controls for the market factor, other known risk factors, and standard business cycle variables. In contrast, the return-on-equity factor does not have any predictive power for future GDP growth.

The author then studies the relationship between news regarding future GDP growth and the two new factors in explaining the cross section of stock returns. To model the unobservable news related to future GDP growth, the author constructs a mimicking portfolio using six equity portfolios and two fixed income portfolios as base assets. The empirical results indicate that the strong explanatory power of the mimicking portfolio return (the GDP factor) largely vanishes once the asset pricing models include the three risk factors.

Finally, the author investigates whether the investment and return-on-equity factors proxy for innovations in state variables that describe the investment opportunity set in the intertemporal CAPM setting. He chooses four financial variables as the state variables: 1) aggregate dividend yield, 2) term spread, 3) default premium, and 4) the Treasury bill rate. The main results emerging from this part of
analysis are that the return-on-equity factor is closely related to innovations in dividend yield and term spread. The explanatory power of the investment and return-on-equity factors for the cross section of stock returns is, to a great extent, subsumed by innovations in the state variables, suggesting that the two new factors are closely related to these economic and financial state variables.

The author concludes that the empirical evidence from both time series and cross sectional analysis suggests that the investment factor and the return-on-equity factor are indeed proxies for fundamental economic risks and investors are rational despite the presence of these return “anomalies.”

Age and Risk Taking

Career choice, location choice, entrepreneurial exploitation and formation of exclusive relationship have some common features. For example, when a worker considers his career at any point in life, his choice is between the existing job and a new job. The present and the new job each yield a stream of future income flows. The difference between them is that the characteristics of the existing job are known whereas those of the new job are not.

Those features are formally modeled by PERC Research Scientist Liqun Liu, Executive Associate Director Andrew J. Rettenmaier, and Director Thomas Saving, in PERC Working Paper 1302. The model is set up such that at the beginning of each period, an individual is endowed with a stream of constant future benefit flows starting in the current period and ending in a predetermined future period. He is also given an option to change this stream of future benefits by drawing from a random distribution about the level of the benefit flow. The individual’s choice is between “doing nothing” and “taking the risk.” If the critical level for a period is larger (smaller) than the actual benefit level of the endowed stream, then the individual prefers taking the risk (doing nothing) to doing nothing (taking the risk). In this sense, the critical benefit level in a period measures the individual’s propensity to take risk in that period.

The authors’ focus is on the horizon’s effect on the individual’s propensity to take risk. They find that the individual’s propensity to take risk, as measured by the critical level of the endowed benefit, decreases over time. This finding thus supports the conventional wisdom that the young will (or should) take more risk than the old. The intuition is that when you are young, any bad outcome from taking a risk can be more easily corrected with more opportunities ahead, whereas any good outcome can stay for a longer period.

This finding can be compared with the inconclusive results on the horizon’s effect on risk taking propensity obtained in investment models. In an investment model, risk taking propensity is measured by the portion of savings invested in risky stocks (as opposed to riskless bonds). In a benchmark investment model, it is found that the optimal weight on stocks should be the same regardless of the length of remaining life. Incorporating future labor income and assuming it is riskless does cause the optimal weight on stocks to decrease over time, but this result contradicts anecdotal evidence of excessive soldiers gambling during wartime (with a shorter horizon than that during the peacetime) and the empirical evidence that younger investors actually hold a smaller proportion of risky assets in their portfolios.