

same time, the bank determines the allowance for this rate (adjustment of IR on loans for desired profitability), which depends on the level of the margin to maintain the profitability of banking (desired adding in spread in the model). The model yield adjustment is as follows: there is a desirable margin level that the bank wants to obtain from the desired spread of interest and a current spread, calculated as a loan rate minus the interest rate on deposits. Then we calculate the desired margin addition (desired adding in spread). This indicator influences the change in interest rates on loans and deposits, divided into two parts in a certain ratio: depending on the competitive market conditions, some of the preferred rate falls on the adjustment of the deposit rate, and the other part on the adjustment of the loan rate.

To conclude with, the built model of system dynamics allows reflecting in a simplified form the mechanism of pricing for loans of commercial banks. In addition, the developed model allows not only reproducing the historical development of the studied indicator; it can serve as a basis for revealing the power of the influence of individual means of regulation on the behavior of the system.

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SYSTEM DYNAMICS MODELING OF MIGRANT REMITTANCES' INFLUENCE ON THE ECONOMIC GROWTH

The continuous flow of migrants from third countries, developing countries, and countries that are involved in various conflicts like political, social, and economic, is of particular relevance. That leads to the inevitable long-term imprints on the economy of different states. IZA World of Labor represents a global perspective. They estimated that a 10% increase in emigration rate leads to a 4% growth of wages in the country of origin on average. In addition, according to the WTO statistics over the last 30 years, the number of free trade agreements worldwide

has only grown annually, increasing from 7 in 1991 to 260 in 2019. It means that economics become more open to people. Therefore, a more detailed study of migration phenomenon may help to analyze such a new vector of influence for the economic growth of small open economies and improve relations between countries.

The last decade represents several scientists that researched this topic from different sides like economic, political, social and historical. However, the basis for it is Everett Lee and his work *The Migration Theory* (1966). There is a differentiation between the push (threats) and pull (opportunities) factors. As a migration process is the result of the interaction of them, Lee suggests that the final decision to move depends on the balance of positive and negative factors in the place of origin and destination. The balance in favor of the relocation should be sufficient to overcome the natural inertia and intermediate obstacles. As for intervening difficulties, Lee understands ethnic barriers and personal reasons. Push factors are those, which motivate people to leave their place of origin to the outside areas. For instance, poor economic activity, lack of job opportunities, conflict, drought, famine or political intolerance. Pull factors are attractive forces in the area of destination which are found in metropolitan areas. They are also known as place utility, which is the desirability of a place that attracts people. Good economic opportunities, more jobs, and the promise of a better life often pull people into new locations.

Another theory is the new economy of labor migration. Migration can affect economic growth from different directions, but especially the remittances sent by immigrants to their countries of origin, they bring in extra capital, which is what households need.

Private migrant remittances are international transfers and the flow of resources to households coming from other countries and mainly related to temporary or permanent migration. They can be done through official channels - through banks, international money transfer systems, post offices, and informally - by transferring cash and other tangible assets from one household to another.

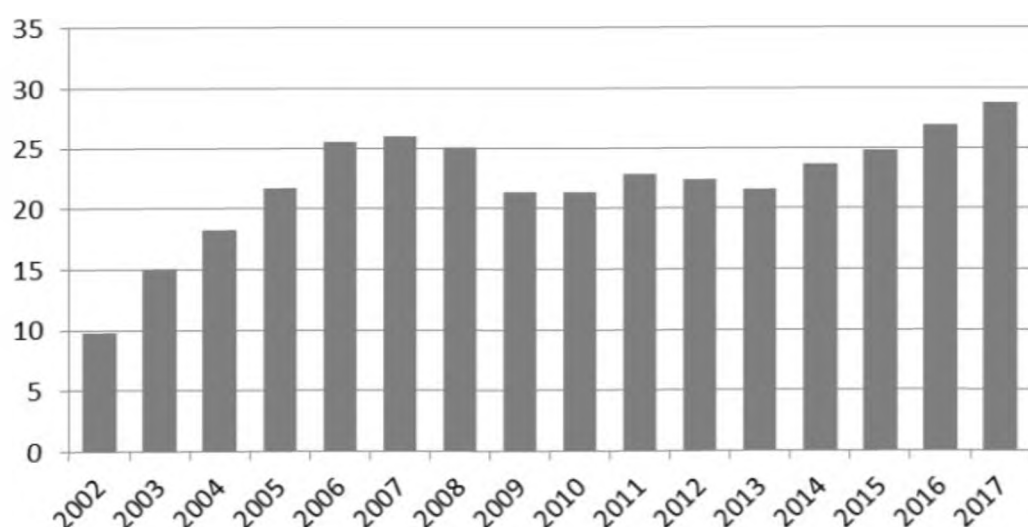
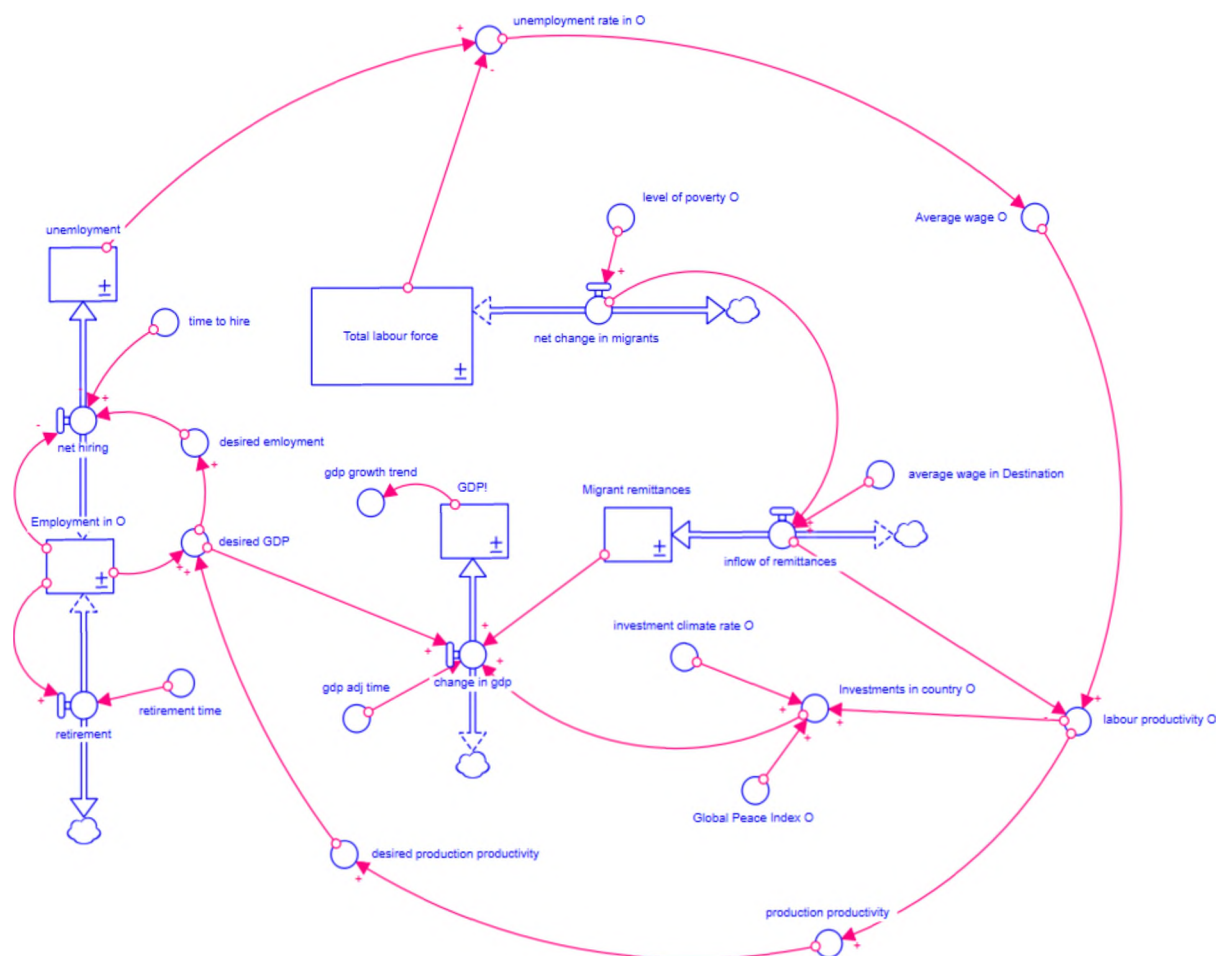


Figure 1. Annual Money Flows to Mexico, Billion USD USA, 1981-2017

Source: MPI data from the World Bank's Prospectus Group

For example, Mexico is one of the largest recipients of remittances from citizens who work outside the country, so remittances are critical to the Mexican economy and its development. In general, since the late 1990s, money transfers have been an important source of income for many Mexicans. In 1996-2007, remittances increased from \$ 4.2 billion to \$ 26.1 billion. As shown in Figure 1, over the last ten years, there has been a trend towards increased remittances of Mexican migrants. Even 2017, although accompanied by a slight decrease in the number of immigrants, funds still tend to increase. In 2017 these remittances accounted for about 3% of the country's GDP.



The main goal of the recreation of those capital flows is to investigate the importance of them for small open economies like Ukraine and to understand their influence on economic growth factors like GDP. There are a few hypotheses confirming or refuting of which this research will be dedicated:

- The outflow of the potential workforce creates a lack of qualified workers in the labor market. This has direct pressure on businesses forcing them to increase wages in the origin-country to attract “young blood”;
- The larger is inflow of remittances influence the lower is labor productivity.

To be sure, that the results are valid and efficient this model will be tested for consistency, experimental and practice checks to be done as well.

The idea of further development is to add more factors that could influence the labor market that will need separation to other branches or forming a supplementary model for the country of destination. That will help to see how this interaction between both economics stimulates an increase in potential economic growth and which other advantages they could receive from it.

Migration has been a historically positive phenomenon as migrants bring new ideas and high motivation. They contribute to the economy of their host countries and even more to the economies of their countries of origin by sending money transfers to their families. Therefore, regulating migration paths can reduce fluctuations in irregular migration, stabilize capital and investment flows, economic linkages between countries, and improve competition in the labor market, which in turn will contribute to the overall economic growth of the country.

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