

THEMATIC SERIES

The ripple effect: economic impacts of internal displacement

This thematic series focuses on measuring the effects of internal displacement on the economic potential of IDPs, host communities and societies as a whole



A framework for measuring the impact
of internal displacement on income

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INTRODUCTION

Internal displacement can affect the lives of people forced to leave their home because of conflict, violence, climate change or disasters, in many ways. Their housing, access to infrastructure and education, health, social life, security and environment change and often degrade.¹ Displaced people often lose their livelihoods, as a result of being pushed away from their work place or source of income. Some experience months or years without the means to make a decent living.

Loss of livelihood can have repercussions on the ability of displaced people to meet their needs and disrupt access to services such as healthcare and education. It can also damage their social life and impact their mental health and wellbeing. IDMC studies have estimated internal displacement triggered by specific events in Nepal, Mexico and Cuba cost the three countries hundreds of millions of dollars.² In an analysis of the economic impacts of internal displacement in eight countries, loss of livelihood was found to be the main financial burden, close to health and housing costs and far ahead of security and education costs.³

These findings are concerning, because they are underestimates. They consider only the most direct consequences of internal displacement on the income of displaced people when they are unable to continue their previous activity. They do not

take into account impacts on the host community or on the broader production system of the affected area. This paper presents a wider framework to evaluate the impacts of internal displacement on income in the host economy.

To consider changes in income in dollars we have developed a simple model guided by economic theory. Total income in an economy is measured as the sum of wage income and profits earned by firms and goods or service producers.⁴ Our model explicitly indicates which causal channels influence these two sources of income, directly and indirectly, in the host economy after an inflow of internally displaced people (IDPs).

To represent these relationships, we generated a causal loop diagram, designed to be a key input into a system dynamics model which aims to simulate the costs in dollars associated with internal displacement. To construct causal pathways addressing how one variable impacts another, some crucial assumptions, drawn from economic theory, must be made about the production process. Income is the product of wage labour earnings and profits from production, so our model links the host labour market to the production of goods. It also explicitly accounts for the fact that goods are produced using a combination of labour work and capital. Capital includes rudimentary agricultural equipment, machines or real estate used in the production process. Workers and machines can produce goods independently, but they also interact with

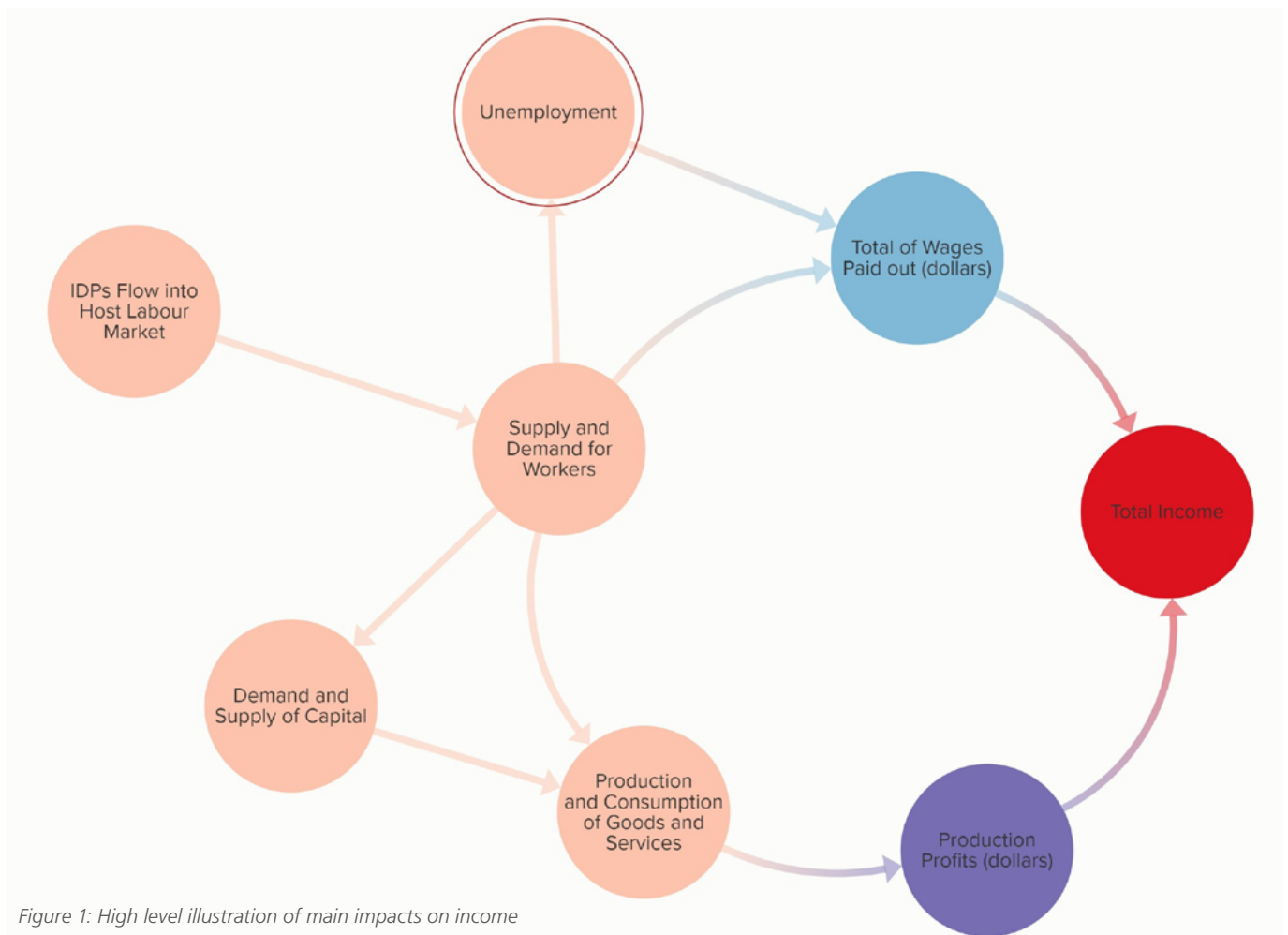


Figure 1: High level illustration of main impacts on income

The following sections and figures expand on these main mechanisms by describing causes and effects in more detail.

IMPACTS ON THE LABOUR MARKET

Our model focusing on the impact of IDP inflows into a host community starts by highlighting the fact that the arrival of IDPs increases the size of the labour force, or the total number of workers in the host economy. Forces of supply and demand, depicted in Figure 2, result in two adverse effects:

1. Unemployment rises: more workers now compete for the same pool of jobs, leading to some of them becoming unemployed.
2. Wages fall: employers know that there is more competition for jobs, so they may offer lower wages to workers knowing that there is a good chance that workers in need will accept them. This will directly decrease the total value of labour compensation in the economy and decrease demand for goods and services, because people will have less income to spend. This will, in turn, reduce producer profits.

In time, however, lower wage levels can increase the number of workers who are hired. This feeds back into a higher level of labour demand relative to supply and boosts employment (and by implication reduces unemployment), which in turn boosts demand for products and services. These feedback loops and dynamics can be seen in Figure 2, “Labour Market D/S”.

The diagram illustrates the labour market dynamics with the following components and relationships:

- Nodes:** Sticky wage factor, Wage, Unemployment, Employment, Excess labour supply, Labour Supply, Host population: working age in labour force, IDPs: working age in labour force, Labour Demand, and host population.
- Central Node:** LabourMarket D/S (Labour Market Disequilibrium).
- Key Relationships:**
 - Sticky wage factor → Wage (strong negative relationship, indicated by a double slash).
 - Wage → Unemployment (+) and Employment (-).
 - Unemployment → Excess labour supply (+).
 - Employment → Excess labour supply (-).
 - Excess labour supply → Labour Supply (+).
 - Labour Supply → Host population: working age in labour force (+) and IDPs: working age in labour force (+).
 - Host population → Host population: working age in labour force (+).
 - IDPs → IDPs: working age in labour force (+).
 - Labour Demand → Excess labour supply (+).
- Feedback Loops:**
 - Reinforcing Loop:** Wage → Unemployment → Excess labour supply → Labour Supply → IDPs: working age in labour force → Host population: working age in labour force → Excess labour supply → Wage.
 - Balancing Loop:** Wage → Employment → Excess labour supply → Labour Supply → IDPs: working age in labour force → Host population: working age in labour force → Excess labour supply → Wage.
- Annotations:**
 - A graph titled "Sticky wage factor" shows a step function where wages do not immediately adjust to market clearing levels.
 - A graph titled "IDPs" shows a rising curve representing the increasing number of internally displaced persons over time.

Figure 2: How inflows of IDPs impact the labour market in the host economy

IMPACTS ON CAPITAL PRODUCTIVITY

With more people employed and assuming productive complementarity between workers and machines, capital becomes more productive as workers can put machines and equipment to good use. This results in the chain of causes and effects depicted in Figure 3. Since capital is more productive, firms demand more of it. Even so, it takes time to order and buy machines, build factories or even find the resources, such as from loans, to fund the desired capital expansion. The short-term effect of these “capital-adjustment costs” is that demand for capital is higher than supply. This excess demand increases the price of capital (the price of capital is often seen as the interest rate on the money borrowed to fund capital expansion). With a delay, the higher interest rate incentivises banks or loan providers to supply more funds for capital expansion. This eventually allows for the production and delivery of machines to producers, thereby increasing the stock of capital in the economy, understood as the total amount of already-produced durable goods or any non-financial asset used to produce goods or services.

IMPACTS ON THE PRODUCTION OF GOODS AND SERVICES

There are five main factors which determine how many goods and services will be produced. The two inputs necessary for the production are the number of employed workers and the stock of capital: more of either of these two inputs results in more production or output. However, the cost of these two inputs also matters. Higher wages and higher interest rates will inevitably be a disincentive for production. The final variable to influence production is demand for goods and services: higher demand signals to producers that their products will be bought, if a sufficient quantity is produced. These supply and demand forces, as well as the price of the products or services, will determine how much output is produced and consumed in the economy. These feedback loops and dynamics can be seen in Figure 4, “Output D/S”.

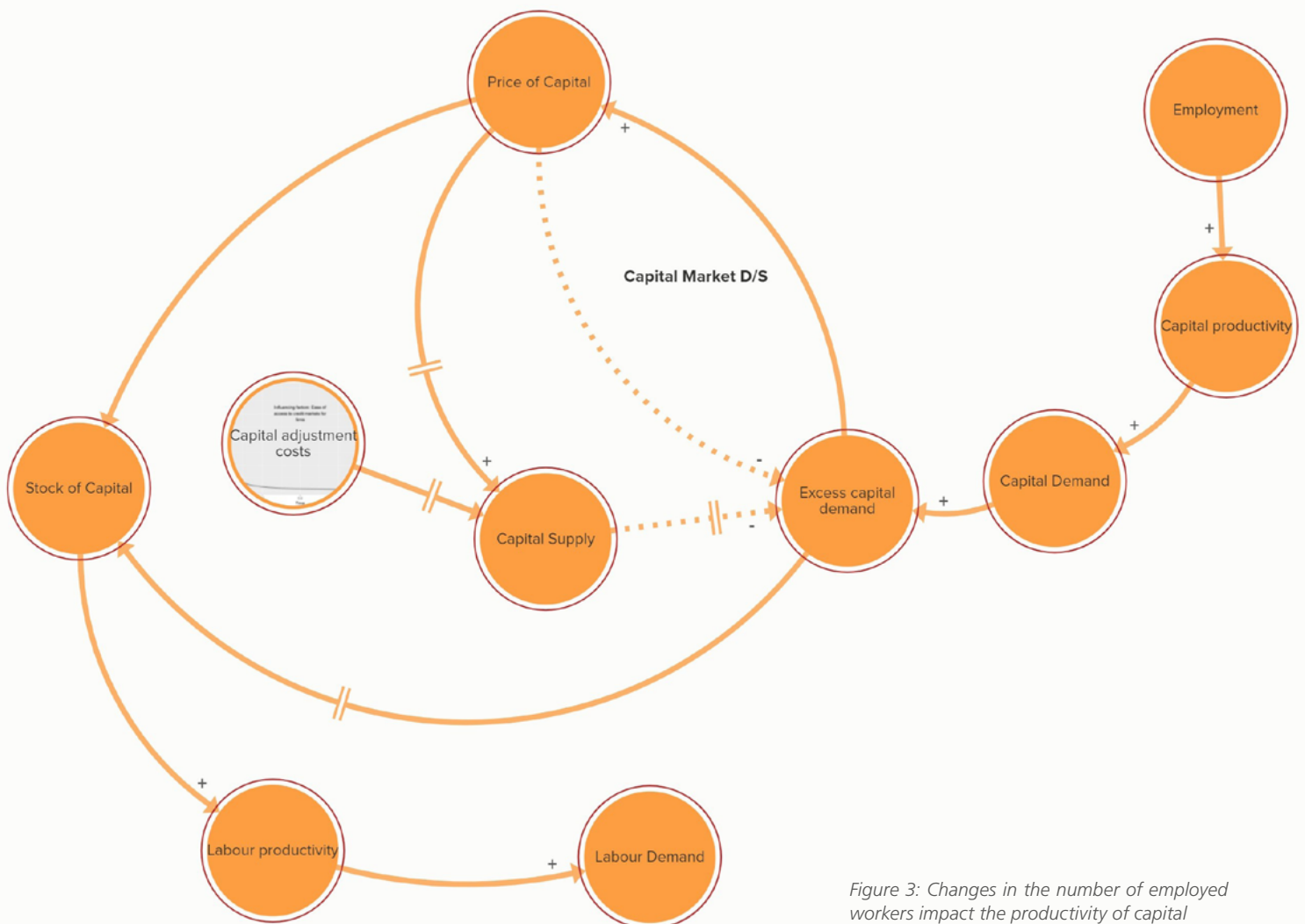
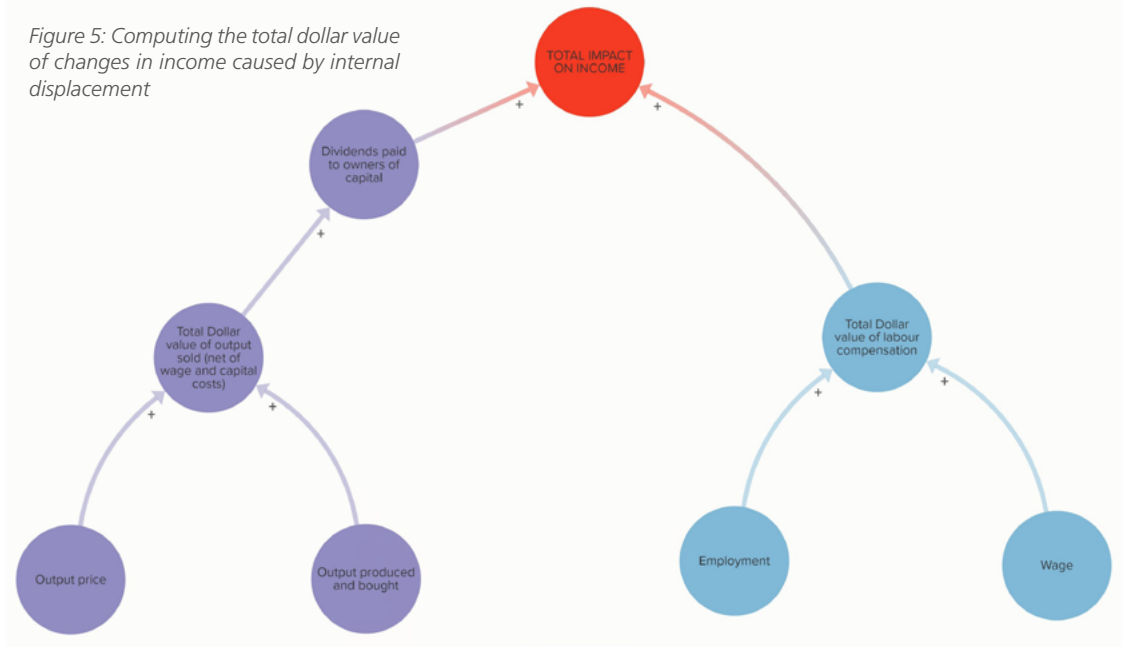
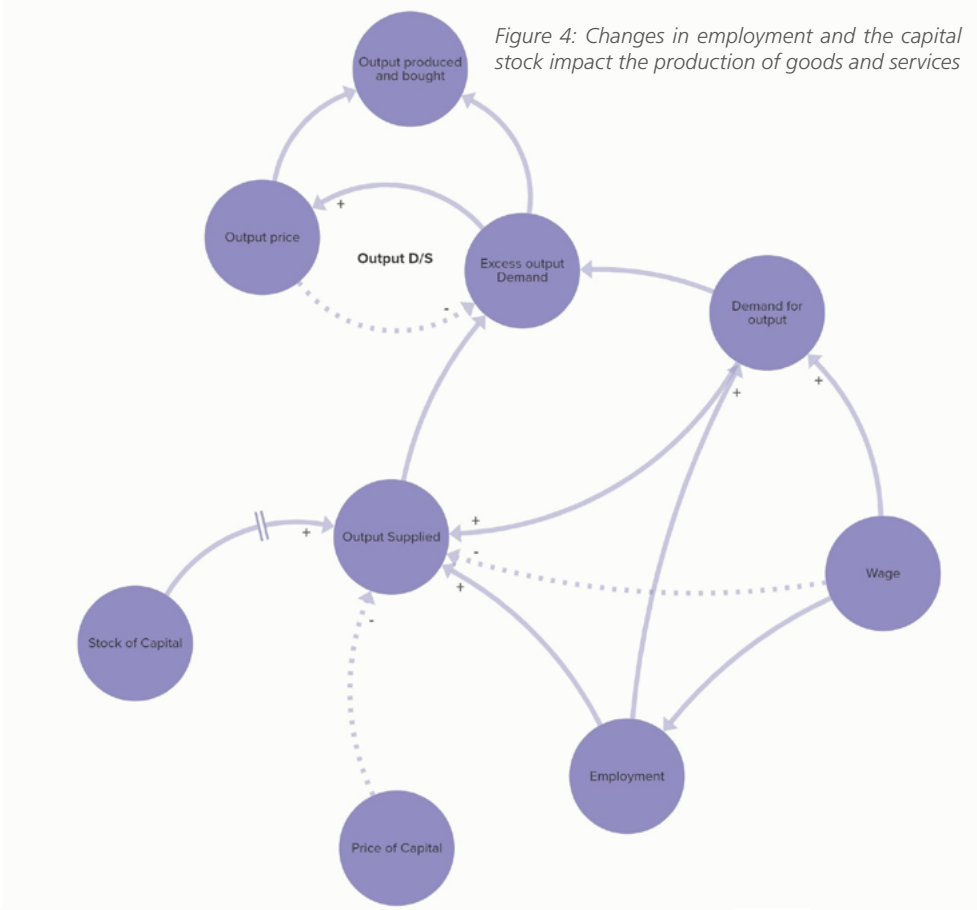


Figure 3: Changes in the number of employed workers impact the productivity of capital



MEASURING CHANGES IN INCOME

The mechanisms described above contribute to direct effects on wages for workers and the amount of output produced in the economy. The final step is to convert these effects into a total dollar amount. Their sum is the dollar-value impact on the economy due to internal displacement in the host community.

As shown in Figure 5, the total wage compensation in the economy is simply the product of the average wage paid per

hour and the total number of hours worked by all employed people, both local and IDP workers, in the host economy. The total value of output sold is the number of goods and services sold, multiplied by their price. The total impact on income is thus obtained as:

$$\begin{aligned}
 &\text{TOTAL IMPACT ON INCOME} \\
 &= \\
 &\text{TOTAL DOLLAR VALUE OF LABOUR} \\
 &\quad \text{COMPENSATION} \\
 &+ \\
 &\text{TOTAL DOLLAR VALUE OF OUTPUT SOLD}^5
 \end{aligned}$$

CONCLUSION

This causal loop diagram can ultimately help to measure the impact of internal displacement on a host economy's income. The diagram shows the causes and effects on the economy that follow from an inflow of IDPs and is a first step towards creating a full system dynamics model.

The system dynamics model would combine the structure identified in the diagram with real-world data to estimate the values of costs and impacts on income in affected countries. The model could also simulate how different policies might mitigate the negative consequences of internal displacement on income.

One of the impacts mass internal displacement can have on local economies is a rise in unemployment. Conditional cash-transfer programs in low-income countries have been used as tools for poverty reduction, but they cost governments money and may reduce finance available elsewhere in their budgets. Employment subsidies to employers which would incentivise them to hire IDPs could help reduce unemployment and stimulate demand for products and services. Training programs could help adapt IDPs' skills to the needs of the local labour market and boost production. Such policies could also prevent displaced people's human capital from depreciating after potentially long periods of unemployment.

A system dynamics model could simulate how costs evolve under such policies and help governments and other actors identify the most efficient interventions in each context. Developing this model requires further research and using it will call for the collection of original data, as the information needed to feed into these models is rarely available from existing sources. In the medium and longer term, these investments could pay off, however, as the costs and losses which result from internal displacement's impacts on income could be more effectively reduced.

NOTES

1. IDMC, [Multidimensional impacts of internal displacement](#), October 2018.
2. IDMC, [Lost production due to internal displacement: the 2015 earthquake in Nepal](#), June 2018; IDMC, [Lost production due to internal displacement: the 2017 earthquake in Mexico](#), January 2019; IDMC, [Lost production due to internal displacement: Cuba, 2008: Hurricane Ike](#), March 2019.
3. IDMC, [Unveiling the cost of internal displacement](#), February 2019.
4. These are known as "accounting" profits and are the income from sales to the firm, after paying all production costs including wages.
5. This is the value of output sold, minus the costs paid for its production, such as wages or capital costs.

Cover photo: An internally displaced woman works as a trainee at a motorbike mechanical shop in town.
Credit: NRC/Ingrid Prestetun, March 2017

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