PATHWAYS' PERSPECTIVES
on social policy in international development

Issue No 17 March 2014

Economic Impacts of a Universal Pension in Bangladesh

Bazlul H Khondker

Do social protection schemes generate economic growth? To answer this question – and based on my previous experience in macro-economic simulations – I decided to use a standard economy wide model to estimate the impacts of a universal pension in Bangladesh on economic growth and test it against alternative investment options, in this case investment in construction and capital machinery. The model used was an economy wide multiplier framework, popularly known as a Social Accounting Matrix (SAM), or the SAM multiplier model (and the methodology is summarised in Box 1). The pension used in my experiment was a universal scheme, providing BDT600 (US$7.60) per month to everyone over 60 years in Bangladesh. The total annual cost of the pension would be BDT68 billion (US$863 million)– or 0.65% of GDP – and I examined an investment of a similar amount in infrastructure. In another publication by HelpAge International[1], I have already demonstrated that such a pension would have a significant impact on old age poverty. However, as I explain in this paper, I also found that the pension was just as effective at generating economic growth as investment in construction and capital machinery. This result is important in a resource-constrained country like Bangladesh, where government revenue comprises only 11.5% of GDP. When governments deliberate whether to invest in an old age pension, they need to think about its economic efficacy (or opportunity cost).My results show that a universal pension could be an effective economic investment by the Government of Bangladesh.

Box 1: Social Accounting Matrix (SAM) and SAM based Multiplier Model

An economy is composed of various agents: producers; factors of production (e.g. labour, capital and land); and institutions (e.g. households, government, enterprises, NGOs, and institutions maintaining linkages with the rest of the world). A data SAM brings together all the numerical outcomes of these agents as accounts for a particular time period – usually a specific year – in a matrix format that preserves consistencies between supply and demand, income and expenditure, exports and imports, and savings and investment. A data SAM, therefore, encompasses all the agents of an economy, capturing their interdependence within a consistent framework. In other words, a data SAM provides a snapshot of the entire economy for a particular time period.

A data SAM model has two components: a dependent (endogenous) variable or set of variables; and, an independent (exogenous) variable or set of variables. Changes in independent (exogenous) variables change the values of dependent (endogenous) variables. Accordingly, a data SAM is converted into a SAM multiplier model by separating the SAM accounts into endogenous and exogenous components. Generally, accounts intended to be used as policy instruments – e.g. government expenditure including social security and investment in infrastructure – are made exogenous and accounts specified as objectives – such as output, commodity demand, factor return and household income or expenditure– must be made

[1] http://www.pension-watch.net/knowledge-centre/?guid=528c80be605b8&order=n
http://www.pension-watch.net/knowledge-centre/?guid=528c8317dae95&order=n

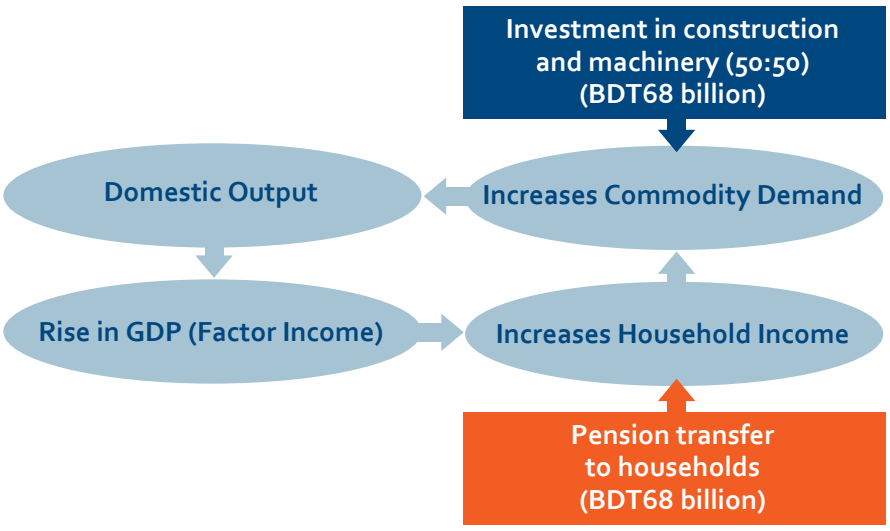
endogenous. For any given injection into the exogenous accounts of the SAM, influence is transmitted through the interdependent SAM system among the endogenous accounts. In the Bangladesh SAM model, production, factors of production and households have been considered endogenous accounts while accounts such as government, enterprises and investment were considered exogenous. Numerical solutions to the endogenous accounts generate a set of multipliers capturing both direct effects and possible induced impacts through the interdependence of the system. Thus, for 9 endogenous accounts, the derived multipliers would be 81; for 10 endogenous accounts, the derived multipliers would be 100.

Description of the simulations

For this research, the Bangladesh data SAM for 2007 was converted into a SAM model. Two simulations were carried out: in the first simulation – labelled "Pension" – BDT68 billion was transferred to household groups on the basis of their observed share in the elderly population (i.e. those aged 60 and over). In the second simulation – labelled "INV" – instead of transferring the funds to households, BDT68 billion was allocated in equal proportion to two investment schemes: construction and installation of capital machinery. The outcomes of the simulations are presented for broad categories of activities/commodities, factors of production, and households.[2]

The transmission mechanisms and impact paths of intervention for the two types of government spending are shown in Figure 1. Expenditure on a pension would increase household income and hence their consumption. The rise in household income would lead to an increase in commodity demand and increased demand for domestic output. To produce additional output to deal with the demand, more factors would be employed leading to a rise in factor income. Given their participation in the factor market, household income would be further increased, leading to rise in household consumption (second round impact). Similarly one can easily trace the intervention paths of an alternative investment via construction and installation of capital machinery.

Figure 1: Transmission mechanisms and impact paths of intervention



Impacts of the Sam Model

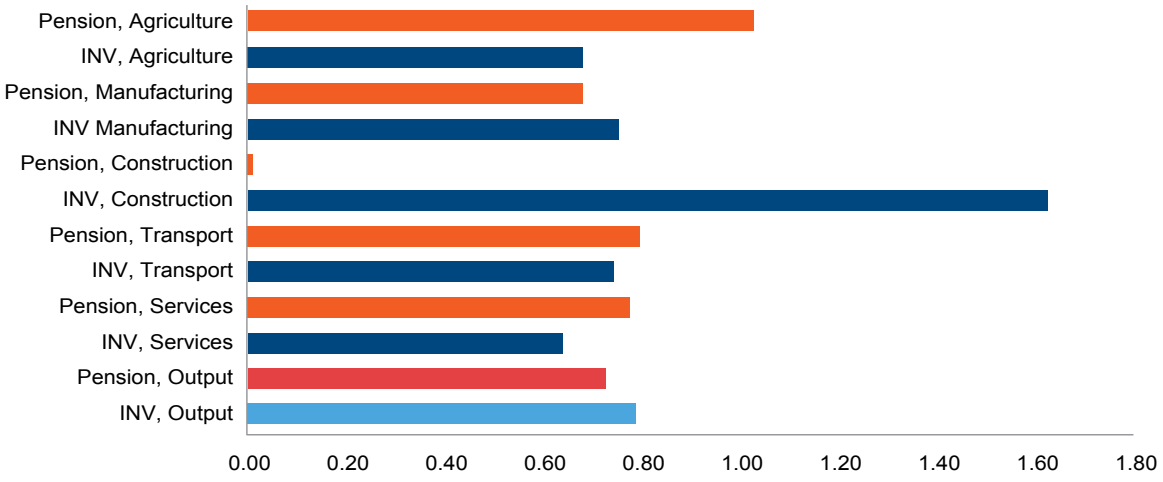
The economic impacts using the SAM model are reported in terms of gross output, value added or factor income and household consumption.

The impacts on domestic output are similar under the two interventions. As Figure 2 indicates, change in domestic output as a percentage of base output value – i.e. before the interventions – is 0.79% under the "INV" simulation compared to

[2] For details please see Khondkeret al (2013). For more on SAM and SAM based multiplier model, please see Pyattand Round (1977; 1979).

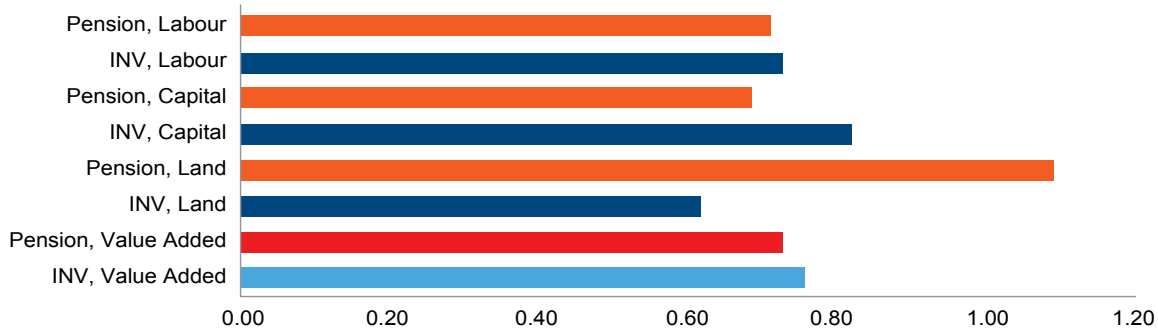
0.72% under the "Pension" simulation. However, the pattern of impacts is different. Under the "INV" simulation, the impact is dominated by construction, followed by manufacturing and transport. In the case of the "Pension" simulation – with the exception of construction, which is purely a capital-goods generating activity – the impacts are much more even across the remaining four activity categories: agriculture, manufacturing, transport and services.

Figure 2: Change in domestic output over the base value (%)



The effects on value added under the two interventions are closer than the impact on domestic output. As shown by Figure 3, the change in value added – or GDP as percentage of base GDP value – is 0.65% under the "INV" simulation compared to 0.62% under the "Pension" simulation. However, the distribution of additional gains in value added (GDP) among the factors of production – land, labour and capital – is very different under the two simulations. Under the "INV" simulation, the main impact comes from the capital factor due to a large expansion of domestic output in the construction industry (which is capital intensive). This is followed by labour factor in terms of the distribution of additional value added gain, while the lowest benefit accrues to the land factor. However, in the "Pension" simulation, the distribution of additional gains among the factors of production is completely reversed. The main impact is on land, due to the relatively high demand for output from agriculture. Capital is the least benefited factor due to a very small increase in the gross output of the construction activity when funds are channelled via households.[3]

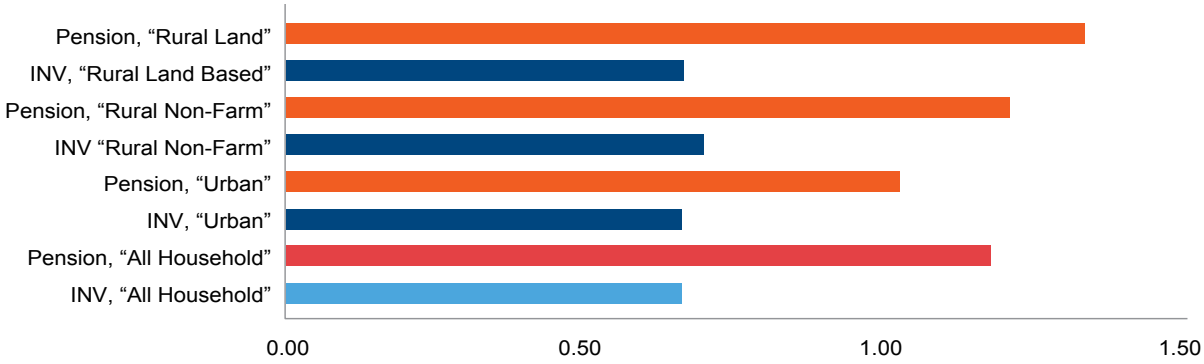
Figure 3: Change in value added over base value (%)



[3] Construction is a capital goods generating activity. Households do not demand products of construction (e.g. roads, bridges, and buildings) in the same way that they demand products of agriculture and manufacturing. Thus, direct transfers to households usually result in low demand for construction products, which in turn leads to lower growth of construction activities and smaller gains for capital factors which are heavily used in construction.

The Pension is a direct transfer to household groups while the investment scheme enhances demand for capital goods generating activities. Therefore, the impact of the Pension on household consumption expenditure should be substantially higher than from an equivalent investment scheme. As Figure 4 demonstrates, the impact of the Pension on household consumption expenditure – at 1.2% over the base consumption expenditure – is double that found for the investment programme (0.6 %). However, of greater interest is the pattern of distribution of extra consumption gain across the three household groups. Under the "Pension" simulation, the distribution appears pro-poor and pro-rural, with land-based household groups being the main beneficiaries followed by rural non-farm household groups (rural poverty is much higher in Bangladesh than urban poverty). In contrast, the investment option has a similar impact in both urban and rural areas.

Figure 4: Change in household consumption over base value (%)



Conclusion

The simulations provide some very interesting lessons for policy makers. It would appear that investing in a universal pension has similar economic impacts to those of investing in infrastructure and capital goods. Moreover, the distribution of economic benefits of a universal pension appears pro-poor and pro-rural, with land-based household groups being the main beneficiaries followed by rural non-farm household groups.

While these findings are from simulations, it is interesting to see similar empirical findings during the recent economic recession in the USA, as a result of its fiscal stimulus package. A study by Zandi (2008) compared the growth impact of a dollar spent on two social protection schemes – the food stamp programme and unemployment insurance – with investment in infrastructure. While the investment in infrastructure had a multiplier effect of 1.6, the spending on the social protection schemes was similar (1.6 for unemployment benefits and 1.7 for food stamps).

So governments should not fear that investing in social protection is a wasted resource. Instead, it can generate significant economic impacts and may be as effective an investment as infrastructure and capital goods. In addition, of course, social protection has a significant impact on poverty. My findings suggest that the Government of Bangladesh should seriously consider investing in a universal pension if it wants to generate further economic growth, tackle poverty and, importantly, ensure that the elderly can live out their final years in dignity.

Bibliography

Khondker B. H. , Charles Knox-Vydmanov and Andrea Vilela (2013) "Old age social protection options for Bangladesh" by Bureau of Economic Research (Dhaka University and HelpAge International, August 2013.

Pyatt, G. and Round J.I (1977) "Social Accounting Matrices for Development Planning", *Review of Income and Wealth*, Series 23, No.4.

Pyatt G and Round JI (1979) "Accounting and Fixed Price Multipliers in a SAM Framework", *Economic Journal*, No. 89.

Zandi, M. M.(2008) "Assessing the Macro-Economic Impact of Fiscal Stimulus 2008" Report January, 2008. Available at www.moodys.com.

Pathways' Perspectives

This series of papers provides people with the opportunity to comment on key issues in international development with the aim of stimulating debate. While Development Pathways may not necessarily agree with the opinions of the authors, we believe it is important to give people space to express their views.

About Development Pathways

We are a group of international development practitioners who specialise in the fields of social protection and social development and work with a range of development organisations and country governments across the developing world. We are committed to bold and innovative thinking and our aim is to provide creative and context-specific solutions to the social and economic policy challenges facing developing countries.

We believe that policy and programming needs to be evidence-based and uniquely appropriate for the political realities of the countries in which we work, which may mean challenging prevailing orthodoxy to deliver the best policy and programme solutions. All of our work is grounded in social and political analysis, ensuring that policies and programmes promote gender equity and women's empowerment, and benefit the most vulnerable.

About The Author

Bazlul H Khondker

Dr. Bazlul Khondker is an aficionado of complex economic modelling and social security: in this study, he's found a way to combine both and hopes that the results will contribute to the debate on the links between social security and economic growth.

For more information please feel free to get in touch, our contact details are below:

DEVELOPMENT PATHWAYS

Development Pathways
483 Green Lanes, London,
N13 4BS United Kingdom

M +44 (0) 781 345 7624
E admin@developmentpathways.co.uk
W www.developmentpathways.co.uk