

## ## WHAT IS IT?

This is a Macroeconomic Agent Based Model.

The financial-economic crisis has led a change in the way of thinking of economists and policy makers. The contribution of this kind of work we have here is to try to create a virtual world based in the individual decision for consumer, and firms. The Agent Based Model will be the aggregation of all the individual decision. The beauty of this area is that the individuals will do not need to follow any axiom or do not need to solve any complex equation, the information are limited and there is cost of transaction, etc. So, this work is near of the family models of Azenza et al. (2015) and Delli Gatti et al. (2011).

## ## HOW IT WORKS

We simulate an economy with two kinds of Firms: (i) Firms that will produce Capital; and (ii) Firms which will produce final goods. There is some numbers of workers, which also are the consumers in this model, the workers offer worker force to the firms and receive a wage for this. If the workers has no job he try to find one visiting some amount of Firms. The productivity of capital and Labor are taken as constant in this model, as well as the wage; the wage are the same for the both kind Firms, so the workers will accept the first job offer he receive.

## ## HOW TO USE IT

You just need to click in "Setup", and then click "Go Once" or "Go Forever". Each house represent one Firm, and each person we see represent one worker.

## ## THINGS TO NOTICE

Look at the series of the Unemployment rate, note they are workers which are able to work and don't find a job, this reflect in the series of the GDP, that means, the production in this economy is not the full, there is some gap between the potential GDP and the actual GDP. The other graphics show the series of prices, the level price in the Capital goods, and the level price in the consumer goods.

## ## THINGS TO TRY

This is the first version of the model, but we already can see some interesting things emerged in these simulations. For exemple, try to change a little the productivity of Labor - the first slider option - and take a look what happen with the series of the Unemployment rate below.

## ## EXTENDING THE MODEL

The next steps will probably be to introduce the option to storage goods into the Firm's environment, include a possibility to negotiate wages, and so on, the possibilities are wide.

## ## CREDITS AND REFERENCES

Details about this framework you may contact us: [elder0055@gmail.com](mailto:elder0055@gmail.com)  
Also, there are some papers which could be very helpful, here are some:

Assenza, Tiziana, Domenico Delli Gatti, and Jakob Grazzini. "Emergent dynamics of a macroeconomic agent based model with capital and credit." *Journal of Economic Dynamics and Control* 50 (2015): 5-28.

Gatti, Domenico Delli, et al. Macroeconomics from the Bottom-up. Vol. 1. Springer Science & Business Media, 2011.