

Problem Set 2: The Krugman (1980) and Melitz (2003) Models

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1. This question considers the “home market” effect of the Krugman (1980) model.
 - (a) Consider the open economy version of the Krugman (1980) model, assume U has the Cobb-Douglass functional form over a set of tradable varieties and a non-tradable numeraire.
 - (b) Set $W = 1, p_0 = 1, A_i = \sigma/(\sigma - 1)$.
 - (c) Use the market clearing condition, the price index and the balanced trade assumption to show how market concentration (e.g. $n/(n + n^*)$) is affected by relative market size ($L/(L + L^*)$), the iceberg cost, and the elasticity of substitution.
2. Go over Krugman(1979), explain the main modelling differences with respect to Krugman (1980), and what their main implication for model predictions are
3. Consider the free entry condition in the closed economy setup of Melitz (2003) we saw in class. Show that $J(a) = \frac{\sigma-1}{\varepsilon-(\sigma-1)} \left(\frac{a}{a_{min}} \right)^{-\varepsilon}$ when $G(a)$ is Pareto.
4. Go over Helpman et al. (2004) and discuss how the model extends the Melitz (2003) model, what the key assumptions are and what the main insights are (maximum one page). You should be able to do this by reading just the introduction and skimming the paper.
5. Go over Melitz and Ottaviano (2008) and discuss how the model extends the Melitz (2003) model, what the key assumptions are and what the main insights are (maximum one page). You should be able to do this by reading just the introduction and skimming the paper.

References

- Helpman, Elhanan, Marc J. Melitz, and Stephen R. Yeaple (2004) ‘Export versus FDI with heterogeneous firms.’ *American Economic Review* 94(1), 300–316
- Melitz, Marc J. (2003) ‘The impact of trade on intra-industry reallocations and aggregate industry productivity.’ *Econometrica* 71(6), 1695–1725
- Melitz, Marc J., and Gianmarco I. P. Ottaviano (2008) ‘Market size, trade, and productivity.’ *Review of Economic Studies* 75(1), 295–316