Redistributing the Gains From Trade Through Progressive Taxation

Spencer G. Lyon, Michael E. Waugh

Matt McKetty

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Introduction and Motivation

- In this paper, Lyon and Waugh attempt to answer two questions related to openness to trade and taxation.
  1. Should a nation's tax system become more progressive as it opens to trade?
  2. Does opening to trade change the benefits of a progressive tax system?
- They develop an open-economy standard incomplete markets model with frictions to move across labor markets.
- Using the open economy component of the model, the authors develop a dynamic Ricardian model of trade.
- Studies such as Topalova(2010) and Autor et al.(2013) have shown that increased import-competition from trade liberalization can lead to losses for certain segments of society, relative to others.

Developing the Model

- Production
  - There is an intermediate goods sector producing goods indexed by ω, and a final goods sector that aggregates the intermediate goods.
  - As in Eaton and Kortum(2002), intermediate goods are not nationally differentiated.
  - Competitive firms face households that supply labor elastically.
- Government
  - Governments can levy labor income taxes and tariffs.
  - All government spending G, is treated as waste.
  - Net tax revenues are given by the following:

$$T(w) = w - \delta w^{1-\tau_p}$$

  - τ_p directly affects the progressivity of the tax scheme and can be intuitively understood by noting that:

$$1 - \tau_p = \frac{1 - T'(w)}{1 - T(w)/w}$$

Introducing Heterogeneity on the Household Side

- Within a country there is a continuum of infinitesimally small households of unit mass, that are infinitely lived, and maximize a discounted utility function.
- The authors model households as living along the same dimension as intermediate goods, so that their location is given by ω.
- Work is also modeled as being a discrete choice between not working and working $\overline{h}$.
- Households can move to another intermediate goods location $\omega^{'}$ by paying moving cost m.
- The paper then moves to focusing on a stationary small open economy equilibrium.

Further Model Characterization and Intuition

- Pre-tax real wages are given by:

$$w(\mathbf{s}) = \omega(\mathbf{s})^{\frac{1}{\theta}} \hat{\mu}(\mathbf{s})^{\frac{-1}{\theta}} z^{\frac{\theta-1}{\theta}} C^{\frac{1}{\theta}}$$

- The model produces a result in which the share of domestic consumption at the island level being produced domestically enters positively in the real wage equation.
- Wages are understood to represent the value of the marginal product of labor, and trade results in lower prices, therefore decreasing the 'value' component.
- While the distribution of wages is stationary, individual islands transit between different states of productivity and world prices as a result of shocks.
- The authors use existing parameter values from the literature, and choose remaining ones so that the model replicates aggregate and cross-sectional moments in the data.

Optimal Progressivity Is Increasing in Openness to Trade

- The Results show that as countries become more open, the tax rate should become more progressive with the top tax rate elasticity to openness being 1/2.(Figure 6)
- At the same time, as progressivity increases, output systematically declines as a result of households migrating less because of the provision of social insurance.(Figure 4)
- A utilitarian social planner trades off gains from social insurance versus the costs of distorting incentives.
    - What is unique in this paper is that labor migration is what is distorted, leading to spacial misallocation and losses in allocative efficiency.
- The impact of this allocative inefficiency can be seen in this breakdown of aggregate GDP: $Y = \overline{wu}(\mathbf{s}) + \int_s (w(s) - \overline{w})(\mu(s) - \overline{\mu}(s))\pi(s)\, ds$
- The second term encapsculates allocative efficiency, and is only present if wages are not equalized across islands, implying some misallocation.

Social Welfare and Progressivity

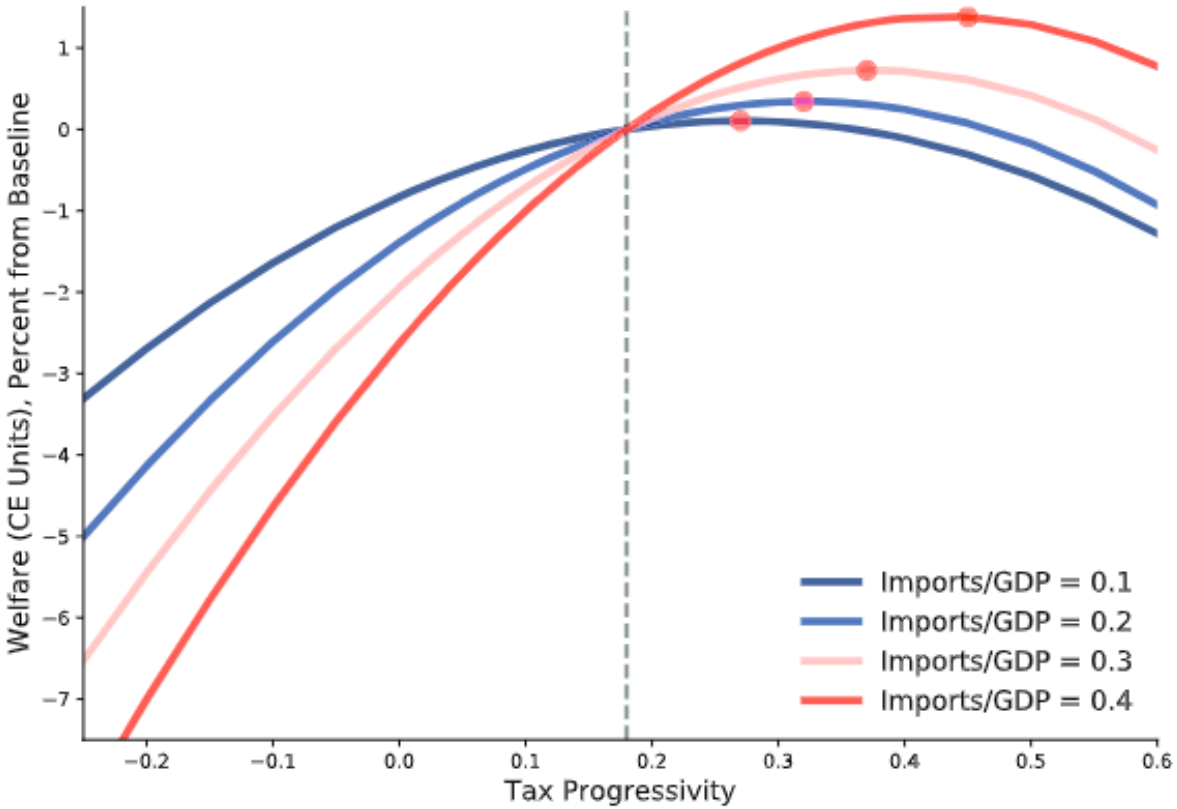

Fig. 6. Social welfare and progressivity for different levels of openness.

Progressivity and Change in GDP

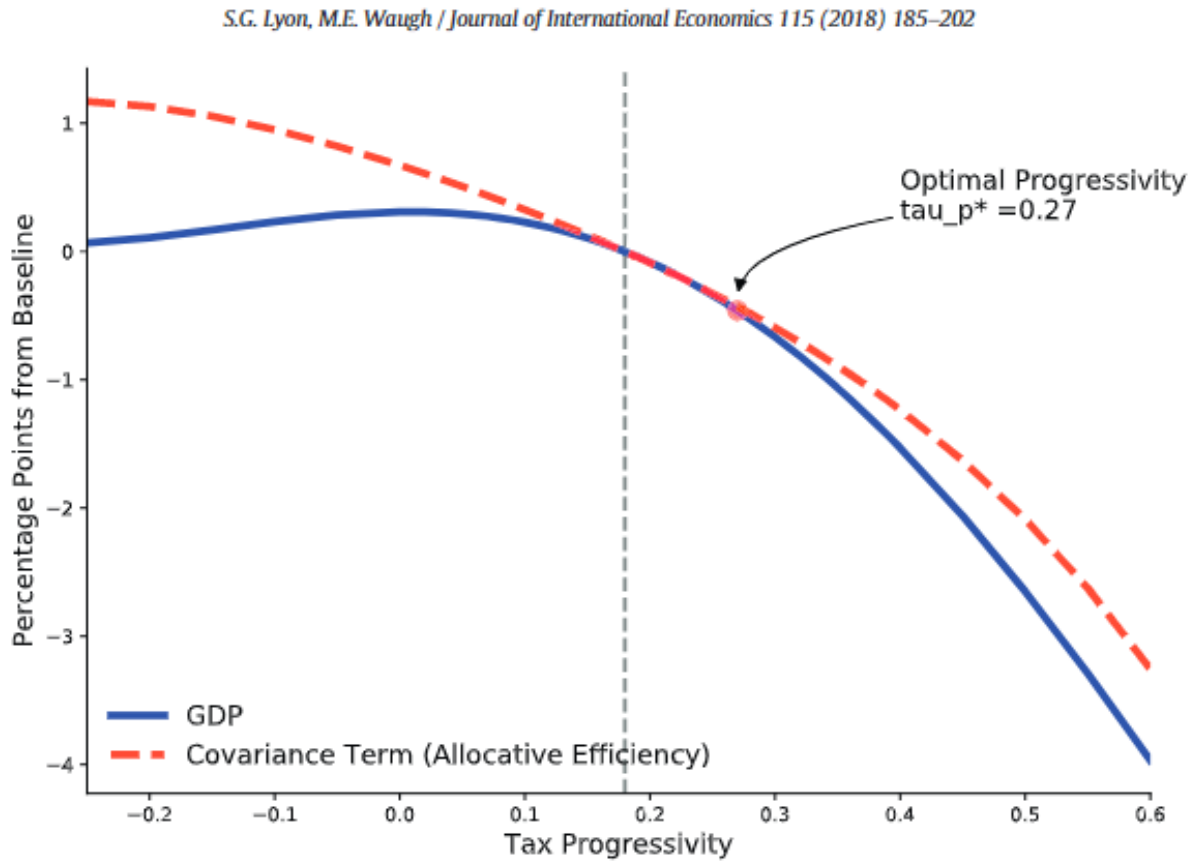

Fig. 4. GDP, GDP decomposition, and progressivity.

Optimal Progressivity, Tariffs and Extensions

- Only at relatively large levels of openness are there quantitatively large welfare gains.
- Costs of progressive taxation relatively constant across openness levels, but benefits are increasing in openness because of the effect of trade on uninsurable income risk.
- The paper finds no evidence that given a labor income tax, a tariff is a welfare improving mechanism for dealing with costs of trade openness.
- However, this paper treats tariff revenue as pure waste, rather than earnings to be transferred to households. This is a possible area for extension.
- Another potential extension would be to allow for differentiated tariffs rather than a single common tariff across all imported goods as they have in their model.