Painful Birth of Trade under Monopolistic Competition

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Abstract. In the standard Krugman (1979) non-CES trade model, several asymmetric countries typically lose from increasing trade costs. However, all countries transiently benefit from such increase at the moment of closing trade, under almost-prohibitive trade costs (i.e., near autarky, which is possible only under non-CES preferences). In other words, during trade liberalization the first step from autarky to trade is necessarily harmful. Our explanation rests on market distortion and business destruction effects.

Keywords: *Trade gains, monopolistic competition, variable elasticity of substitution, autarky.*

We study a standard Krugman (pro-competitive) trade model. Unlike oligopoly, the game goes among infinitely many players and thereby strategic interactions are excluded in free-entry Nash equilibrium (each producer chooses her output, perceiving others' strategies as given).

Our focus is on gains from trade, the key question in trade theory. In New Trade theory, it again attracted a vivid discussion ([3], [9]) after [2] puzzled the theorists with surprizingly low estimated gains. One of possible explanations is the constant elasticity of substitution (CES) assumption, dominating in this discussion. Instead, variable elasticity of substitution (VES) is more realistic and related “pro-competitive” effects promise additional gains. However, under VES, [1] finds *lower* estimated trade gains than under CES demand. Moreover, under VES even welfare loss may occur, when free trade is compared with autarky ([5]) under specific utilities/costs.

By contrast, the present paper discovers harmful trade near autarky—but now under *any* additive VES utilities enabling autarky. As to gains, they do occur near free trade, at least under realistic preferences. In other words, the gains from gradual trade liberalization are non-monotone, eventually positive but in the beginning negative. So, the *first step from autarky to trade is harmful.* A simple version of this effect in monopolistic competition is firstly found in our discussion paper [6] for two countries, it is generalized now to multi-country world and incomplete autarky.

Our setting is ***standard*** in New Trade. It is a version of general Krugman's one-sector monopolistic competition [8] with unspecified additive utilities, without outside good. Homogeneous firms use one production factor (labor) with the same fixed and marginal cost; consumers are also identical. For analytical tractability of difficult case of asymmetric countries, several countries include only two types: G-countries have great population, while L-countries can be little or equal to G. Labor markets do clear, trade is balanced. At the equilibrium, any pair of countries can trade or not, depending on the level of iceberg trade cost. Thereby, we introduce a new, convenient version of *asymmetric multi-country* Krugman's trade model (hopefully useful for other studies). However, the assumption of two country-types is mostly expositional, not crucial for results. It is not binding for decreasing welfare near autarky, because it is natural to expect that trade liberalization invites country types into trade one-by-one, not everyone simultaneously. Therefore, "painful birth of trade" effect is quite general, it should occur among arbitrarily many country types, where only some types are involved into the first step of liberalization.

We show that near free trade, welfare increases in *each* country during this final stage of liberalization, which is not surprising. However, welfare increases despite *decreasing* mass of firms, which means that, business destruction by trade liberalization is not necessarily harmful.

More subtle and unexpected is the effect at the beginning of liberalization, near *complete* autarky. We prove that at this stage *welfare deteriorates* in each country, i.e., harmful trade occurs. The mechanism of welfare reduction here is quite different from oligopolistic "painful birth of trade" well known after [4], where strategic interaction explains the effect. By contrast, in New Trade, where strategic interaction is absent, the harmful effect looks new and surprising. It was overlooked so far, because of dominating CES model, which excludes autarky.

Summarizing, our paper supports [1] in the sense that a VES economy can bring smaller trade gains than a CES one. Moreover, we even predict initially harmful trade liberalization. From the policy viewpoint, this sounds protectionist but in fact, it only suggests *not to liberalize trade gradually*, better to *jump* over the downfall of initial losses, or just wait until decreasing transport cost makes this jump possible. This recipe looks somewhat similar to "infant industry" argument for postponing trade, but the mechanism is very different, not connected with time and learning. Not young trade but small-in-volume trade appears detrimental here.

See [7] for details.

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