Finally, if c is negative, and b is such that the geographically localized externality is positive in the neighborhood of the symmetric equilibrium, that is $\kappa = b/4 + c > 0$, congestions effects may become so strong to imply a productivity level smaller than 1 when mobile workers are completely concentrated in one region. In this case, figure 8 shows that while the symmetric equilibrium is stable for high trade costs ($\tau = 6$), it is unstable for lower trade costs ($\tau = 3$ and $\tau = 2$).[17]

Moreover, due to the existence of strong congestion effects, full agglomeration is never stable, while two asymmetric equilibria may be stable.

Insert figure 8 about here

5 Conclusion

This work re-examines Krugman model properties when interregional productivity differences may arise in the modern sector. This reassessment is achieved by means of the description of the intensities of centripetal and centrifugal forces which determine the sustainability of the full agglomeration equilibria of the modern sector.[18] We show how different parameters of the model concur to determine centripetal and centrifugal forces intensities, either in the case of "fixed-technology" or traditional forces, or in the case of "variable-technology" forces.

Moreover, our modified version of the standard economic geography model confirms the finding by Venables [15] that is with Ricardian differences there could exist equilibria characterized by the localization of sectors in the region in which they have a comparative disadvantage, even tough this could happen only for intermediate trade costs. However, we find that when the two regions are sufficiently integrated, the comparative advantage dominates and production localization reflects the comparative advantage with manufacturing production agglomerated in the more productive region, while the agricultural good is produced in both regions. A similar result is obtained by Forslid and Wooton ([3], p. *) who find that "when trade barriers are sufficiently low, comparative

[17] Figure 8 is drawn for: $\sigma = 3.33$; $\mu = 0.3$; $b = 9$; $c = -1$.

[18] Baldwin, Forslid, Martin, Ottaviano and Robert-Nicoud [1] stress that the evaluation of agglomeration and dispersion forces in fully agglomerated equilibria is rather difficult.

advantage takes the upper hand, pulling workers and production from the core to the other region". However, their results are different since comparative advantage in their case acts as a dispersion force and implies a symmetric stable outcome, while in our case it acts as an agglomeration force and implies a sustainable core-periphery outcome with production of the modern sector agglomerated in the more productive region.

Specifically, with potential technological differences, standard results may continue to hold. Particularly, when geographically localized knowledge spillovers are absent ($\kappa = 0$), the symmetric equilibrium can be attained only when interregional productivity levels are equal and the break point is the same as in the traditional model by Krugman [6]. In this case, the symmetric equilibrium is stable for low levels of integration, or high trade costs, and unstable for high integration levels. However, when $\kappa = 0$ the sustain point does coincide with the one found by Krugman only if manufacturing productivity levels are equal.

When regional modern sector productivity levels depend on skilled workers density ($\kappa > 0$), the range of closedness of trade for which the symmetric equilibrium is stable, changes. When the intensity of this externality increases (that is κ increases), the range of trade costs for which the symmetric equilibrium is stable, is reduced. Moreover, the positive technological externality generated by the higher productivity level in the region in which workers density is higher may even require an upper limit to its intensity in order to avoid the disappearance of the range of trade costs values for which the symmetric equilibrium is stable. This leads us to the definition of the pro dispersion condition that ensures the existence of such a range.

Finally, we note that the modified version of the standard economic geography presented in this paper could be useful for further studies on the evolution of interregional technological differences considered in a framework in which pecuniary externalities act.

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