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Growing apart: The division of labor and the breakdown of informal institutions

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In this paper, we model the co-evolution of the division of labor and informal institutions based on three assumptions. First, informal institutions lower coordination costs among specialists, which increases the equilibrium division of labor. Second, advances in the division of labor increase the size of interpersonal trading groups and thereby undermine the game theoretic basis of informal institutions. Finally, the collective nature of informal institutions implies that they are undervalued in private decision making. Together these assumptions imply that the equilibrium division of labor is too high from a social perspective. Consequently, the economy has greater than optimal complexity and grows at a higher than optimal rate of growth. *Journal of Comparative Economics* **34** (1) (2006) 75–91. Pierce Hall 107, Smith College, Northampton, MA 01063, USA.

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1. Introduction

Although growth leads to improvements in the material standard of living, psychic costs may accompany these benefits. Putnam (2000) and Tam (1998) focus on the complexity of modern life and the resulting breakdown of community. However, these conjectures have not been subject to formal analysis. Any attempt to investigate these concerns must provide a link between

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economic complexity and economic development and explain why the actual and optimal levels of economic complexity differ. In this paper, we consider one such link by analyzing the relationship between the division of labor and informal institutions.

In growth models, the division of labor is endogenized by assuming that agents face a trade-off between gains to specialization and interpersonal coordination costs, as in Yang and Borland (1991), Tamura (1992, 1996), Becker and Murphy (1992) and Davis (2001, 2003a, 2003b). Gains to specialization may offset diminishing returns to capital, establishing the basis for a virtuous cycle of growth driven by accumulation and the evolution of the division of labor. With the division of labor dependent on a web of interpersonal exchange, this literature provides a link between economic growth and increases in the complexity of economic life. The complexity of economic organization depends on individual labor specialization decisions and the resulting degree of interpersonal economic interdependence.

We extend this literature in two directions. First, informal institutions are given an explicit role to play in facilitating the division of labor. Informal institutions consist of a set of conventions regarding behavior among members of a society and are crucial for establishing a stable social order. In the economic sphere, these institutions reduce contract enforcement costs and facilitate the coordination of productive activity. Hence, they allow greater exploitation of gains from the division of labor. Second, we incorporate North's (1990) insight that advances in the division of labor lead to the deterioration of informal institutions. Lacking the threat of official force, informal institutions arise from spontaneous cooperation among members of a group. However, as we show, advances in the division of labor undermine those group characteristics on which informal coordination and enforcement mechanisms depend.

Previous models of the division of labor assume that the costs and benefits to labor specialization are borne entirely by the optimizing individual. As a result, the equilibrium and optimal levels of labor specialization do not differ and the resulting economies achieve an optimal degree of complexity. We deviate from this assumption by treating informal institutions as a public good. In making labor specialization decisions, individual agents take the quality of informal institutions as given. Intuitively, an agent's decision to move to a city in which specialized skills may be utilized more intensively does not depend on how this decision may affect the level of interpersonal trust and cooperation in the city. Hence, we introduce an external cost to specialization, which implies that labor is overspecialized from a social perspective. In equilibrium, the economy is overly complex.

Treating informal institutions as public goods generates rate effects as well as level effects. As Rosen (1983) and Young (1928) have pointed out, the return to a specialized capital good increases with its rate of utilization. In our model, more specialized workers utilize their skills more intensively so that greater-than-optimal specialization results in greater-than-optimal investment rates. Thus, in addition to being overly complex, the economy grows too fast and the onset of industrialization and commercialization, which marks the transition from a traditional to a market economy, occurs at a lower-than- optimal level of development. Our model is not intended to provide a comprehensive welfare analysis of labor specialization decisions. Rather, we focus on a single aspect of the relationship between labor specialization and informal institutions. We ignore the substitution of formal for informal institutions considered by North (1990) and negative aspects of informal arrangements, such as cronyism and discrimination, discussed in Bowles and Gintis (2004). The appropriate interpretation of our work is that the public nature of informal institutions provides a tendency toward over specialization but not that specialization is characterized by negative externalities on balance. Assessing the relative strengths of the negative and positive spillovers to labor specialization is beyond the scope of this paper.