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The division of labor and the growth of government

Lewis S. Davis

Smith College, 107 Pierce Hall, Northampton, MA 01060 USA

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Abstract

This paper develops a dynamic, general equilibrium model of specialization-driven growth in which private coordination costs are decreasing in public expenditure on physical and institutional infrastructure. The model provides an explicitly economic explanation of the secular rise of government. In addition, endogenous specialization decisions imply the existence of four development stages, characterized by distinct outcomes regarding the division of labor, the role of government and the return to capital. Growth is characterized by capital accumulation, market integration, the division of labor and the growth of government. The effectiveness of government plays a central role in determining whether an economy converges to a high or low level equilibrium. © 2002 Elsevier Science B.V. All rights reserved.

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1. Introduction

While it is well known that among industrialized countries government's share of output has risen dramatically over the past century, this stylized fact, known as Wagner's law, has not found its way into the formal literature on economic growth. This omission appears to be due both to the ready availability of arguments that attribute the rise of government to political or socio-economic mechanisms[1] and to the tendency

E-mail address: lsdavis@smith.edu (L.S. Davis).

[1] For example, Higgs (1987) explains the rise of the US government in terms of a ratchet effect involving periodic crises and subsequent institutional rigidity; Hughes (1993) argues that rising incomes increase the taste for redistributional policies.

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of formal, dynamic analysis to focus on the characteristics of the steady state.[2] In the steady state, government's share of output is the ratio of two variables with a common growth rate and is, thus, constant by construction.

While steady state analysis correctly predicts that government's share of output cannot increase without bound, it does little to explain the US and European experience of a nearly century-long rise of government. This paper suggests an explicitly economic rationale for the secular rise of government by considering the transitional dynamics of a model in which public goods facilitate an ever-finer division of labor.

There are a number of reasons public spending might reduce the private cost of coordinating production and exchange activities among specialized economic agents.

First, the public sector supplies a variety of physical and institutional infrastructure that establish the framework within which economic transactions take place and serve to mitigate private transaction costs. Transportation costs, for example, depend upon the provision of roads, bridges and ports; contract enforcement costs depend on the services of public institutions that define and enforce property rights. Increases in the division of labor, and the resulting increase in the number and complexity of economic interactions, tend to raise the return to public infrastructure and thus to government spending.

Second, increases in the gains to specialization tend to increase the incentive for agents to mitigate transportation and communication costs by reducing interpersonal distances. Urbanization in turn increases the intensity of certain external diseconomies of propinquity, examples being traffic congestion and noise pollution, thereby increasing the scope for positive government intervention.

Third, as argued by North (1990), the division of labor results in the substitution of formal for informal rules governing exchange, increasing the scope and complexity of the legal and justice systems. Models of spontaneous cooperation suggest that the division of labor undermines those group characteristics on which informal coordination depends. Other things equal, an increase in the division of labor raises the number of specialist producers whose efforts must be coordinated. Furthermore, by encouraging the growth of towns and cities the division of labor decreases the density of the social network in which exchange takes place, limiting opportunities for retribution on which informal institutions rely. Finally, specialization increases interpersonal heterogeneity, reducing each agent's knowledge of other players' preferences and frustrating attempts to arrive at an appropriate set of "sticks and carrots" for informal enforcement mechanisms.[3]

The relationship between the division of labor and government spending proposed here is of a more limited nature than Wagner's (1883) original hypothesis regarding the rise of state activity. In broad accord with the arguments above, Wagner did associate

[2] See, for example, Uzawa (1965), Shell (1966), Jones and Manuelli (1990), King and Rebelo (1990), Barro (1990), Rebelo (1991), and Glomm and Ravikumar (1994, 1997). Though not explicitly modeled, the possibility of a positive role for government may be inferred from the work of theorists such as Arrow (1962), Lucas (1988) and Romer (1986, 1990): spillovers to certain private investment activities imply the divergence of private and social returns.

[3] See Hardin (1982) on group size, Taylor (1987) on the importance of a dense network of social interactions, and Schofield (1985) on the cost of obtaining information on other players' preferences.