

## **Econ 8311--8312: Growth Theory and Economic Development**

### *Outline*

The purpose of this course is to discuss issues related to growth and development. Since our background is primarily in theory, the emphasis will be on models rather than on empirical work per se. This does not mean that we will ignore empirical work or facts in the discussion, rather, it means that these discussions will be used more for motivation of the models that we will analyze. Bottom line: in this course we study models; hopefully motivated by some stylized facts.

### *Prerequisites*

Given the nature of the central topic --growth and development-- it is natural to focus attention on dynamic models. We will assume some familiarity with the standard infinitely lived representative agent model of growth theory. By this we mean a basic knowledge of the issues (but not the technical details) involved in the existence of competitive equilibria (both with and without distortions), as well as the basic techniques to characterize solutions to intertemporal optimization problems (Euler equations and transversality conditions) and the equilibria they induce. If you understood your first year macro class, you should be okay on this dimension.

Our strategy will be to use primarily discrete time models even though many of the papers we will discuss use continuous time models. In these cases we will try to present a discrete time version in class. If this proves difficult (sometimes it is possible to get closed form solutions for continuous time models when no such solution exists for discrete time versions) we will use the continuous time version.

### *Course Organization*

There are two distinct reasons for you to take a class like this one. First, it is an easy way for you to become exposed to a body of literature- find out what is in it, what is still needed to be done, etc. Second, hopefully, you can learn something about doing research in economics in general. How does one carve out a realistically 'sized' problem, What are the role of the assumptions used in the paper, etc. This should be useful to you in whatever area of economics that you choose to work in. To address these two goals, we will analyze a series of papers in the area; the forecast is that we will discuss approximately one paper per class session. We expect that most of the sessions will be of the "participatory lecture style" variety. (By this we mean that although we will plan to do most of the talking, we expect you to have read in advance and hence to be able to answer some questions about the material.) To realize the second goal, our plan is to leave enough time at the end of each class so that we can attack/analyze the research strategy of the paper. You will be expected to have thought about the question "Why didn't this author do something different in this paper?" ahead of time so that this discussion will be useful to all!

To get a grade in this class, you will be required to complete a take-home final exam. This will purposely be loosely structured so that you can emphasize your strengths when completing it. This means that it will look something like: "How important is \_\_\_\_\_ in determining growth and development? What does the existing empirical literature have to say about this question? The existing theoretical literature? How could you improve each of these? Improve them." Or something like this. The only thing to be determined is what

goes in the blank.

We will discuss the details at the first meeting.

### *Content*

What follows is a list of papers for this course. This list is much too long by design. The intention is to give you some sort of an organization of the literature along with a guide, by topic, of some of the recent work in the area in case you are interested in pursuing a particular topic in more detail. This list is **NOT** complete. Undoubtedly there are famous papers (and famous authors) left off.

The references that follow are organized in 8 “Sections”. The first four sections Larry’s and the other four ones Michele’s. Roughly, this is the way we plan to split the semester and it should give you an idea of who is covering what and what kind of itinerary the entire semester is supposed to walk you through. To give an idea of what will be discussed, we have ‘starred’ the papers that we expect to talk about in class.

There are several things to be aware of here:

- 1) There is an overemphasis among the starred papers on things written by us (along with co-authors). Primarily, this reflects laziness on our part- these are the easiest ones to discuss since we know them best. So, you should discount this factor when going through the reading list.
- 2) There is an overemphasis among the starred papers on things that we wish we had spent more time studying in detail in the past. Thus, we have starred them to commit ourself to go over them in detail now. You will just have to suffer through learning these papers along with us.
- 3) There is room for ‘bargaining’ over topics/specific papers if there is something that someone is particularly interested in. If this is the case, you should let us know as soon as possible during the first few weeks, so that plans can be made!
- 4) There is not a perfect way to assign individual papers to topics (which is what we do below). There are many papers on the list that could easily have been assigned to several different topics or Sections. Because of this, you should use the list only as a rough guide if you want to go on in a particular area in more detail.

### **0. Background**

Examples of books that contain relatively good treatments of the basic tools that we will use along with economic applications are:

Sargent, Thomas J., **Dynamic Macroeconomic Theory**, Harvard University Press.

Blanchard, O. and S. Fischer, **Lectures on Macroeconomics**, MIT Press.

McCandless, G. with N. Wallace, **Introduction to Dynamic Macroeconomic Theory: An Overlapping Generations Approach**, Harvard University Press.

Stokey, N. L. and R.E. Lucas (with the collaboration of E. C. Prescott), **Recursive Methods in Dynamic**

**Economics**, Harvard University Press.

Romer, P. M., (1989), "Capital Accumulation in the Theory of Long Run Growth", in R.J. Barro (ed) **Modern Business Cycle Theory**, Harvard University Press. (It contains a very succinct introduction to dynamic methods as applied to growth models).

There are no textbooks that cover all of the topics I would like to cover (and it is more informative to look at papers if you want to learn how to do research). However, there are three recent books that review a lot of material on growth and development, and hence, they are good books to have on your shelf if you are interested in the "new" growth theory. They are:

Grossman, G and E. Helpman, **Innovation and Growth in the Global Economy**, MIT Press, 1991.

Barro, R and X. Sala-i-Martin, **Economic Growth**, McGraw Hill, 1995.

Aghion, P. and P. Howitt, **Endogenous Growth Theory**, MIT Press, 1998.

## **1. Basic Growth Facts and the Convex Aggregate Growth Model**

### **1.1. Exogenous Growth Models**

\*Solow, R. M., (1956), "A Contribution to the Theory of Economic Growth," *Quarterly Journal of Economics*, 70, 65-94.

\*Koopmans, T. C., (1965), "On the Concept of Optimal Economic Growth," In **The Econometric Approach to Development Planning**, Amsterdam: North-Holland.

Cass, D., (1965), "Optimum Growth in an Aggregative Model of Capital Accumulation," *Review of Economic Studies*, 32, 233-240.

Ramsey, F. P., (1928), "A Mathematical Theory of Savings," *Economic Journal*, 38, 543-559.

Grossman, G. M. and E. Helpman, (1991), **Innovation and Growth in the Global Economy**, MIT Press. Chapters 1 and 2.

### **1.2. Endogenous Growth Models**

\*Jones, L. E. and Manuelli, R.E., (1990), "A Convex Model of Equilibrium Growth: Theory and Policy Implications," *Journal of Political Economy*, Vol 98, No 5, 1008-38, October.

\*Rebelo, S., (1991), "Long-Run Policy Analysis and Long-Run Growth," *Journal of Political Economy*, 99, No. 3, 500-521.

Uzawa, H., (1965), "Optimum Technical Change in an Aggregative Model of Economic Growth," *International Economic Review*, 6, 18-31.

Grossman, G. M. and E. Helpman, (1991), **Innovation and Growth in the Global Economy**, MIT Press. Chapter 2.

## **2. Aggregate Models with Non-Convexities and/ or Externalities that Deliver Growth**

### **A. Basic Physical/Human Capital Models**

\*Romer, P. M., (1986), "Increasing Returns and Long Run Growth," *Journal of Political Economy*, Vol. 94, pp 1002-37, October.

\*Lucas, R. E., Jr., (1988), "On the Mechanics of Economic Development," *Journal of Monetary Economics*, Vol. 22, pp 3-42.

\*Romer, P. M., (1987), "Growth Based on Increasing Returns due to Specialization," *American Economic Review*, May, Vol. 77, No. 2, 56-62. And the working paper version of this paper.

Romer, P. M., (1991), "Increasing Returns and New Developments in the Theory of Growth," in W. A. Barnett, B. Cornet, C. d'Aspremont, J. J. Gabszewicz and A. Mas-Colell (eds) **Equilibrium Theory and Applications: Proceedings of the Sixth International Symposium in Economic Theory and Econometrics**, Cambridge: Cambridge University Press.

Romer, P. M., (1990), "Are Nonconvexities Important for Understanding Growth?," *American Economic Review*, Vol 80., No. 2, pp 97-103, May.

Shell, K., (1967), "A Model of Inventive Activity and Capital Accumulation," in, Shell, Ed., **Essays in the Theory of Optimal Economic Growth**, MIT Press: Cambridge, MA.

Shell, K., (1973), "Inventive Activity, Industrial Organization and Economic Growth," in **Models of Economic Growth**, J. A. Mirrlees and Nicholas Stern, Eds., London:Macmillan.

Grossman, G. M. and E. Helpman, (1991), **Innovation and Growth in the Global Economy**, MIT Press. Chapter 3.

### **B. Models with Learning By Doing**

\*Lucas, R. E., Jr., (1993), "Making a Miracle," *Econometrica*, Vol. 61, No.2, pp 251-272, March.

\*Young, A., (1993), "Invention and Bounded Learning by Doing," *Journal of Political Economy*, Vol. 101, No. 3, pp 443-472.

Arrow, K., (1962), "The Economic Implications of Learning by Doing," *Review of Economic Studies*, 29, 155-173.

### **C. Models of Technological Innovation, Diffusion and R&D**

\*Romer, P. M., (1990), "Endogenous Technological Change," *Journal of Political Economy*, Vol 98, No. 5, Part 2, pp S71-S102, October.

\*Stokey, N.L., (1992), "R&D and Economic Growth," Working Paper, June.

\*Parente, S. L., (1994), "Technology Adoption, Learning by Doing, and Economic Growth," *Journal of Economic Theory*, 63, 346-369.

\*Parente, S. L. and E. C. Prescott, (1994), "Barriers to Technology Adoption and Development," *Journal of Political Economy*, 102, 298-321.

Segerstrom, P., (1991), "Innovation, Imitation, and Economic Growth," *Journal of Political Economy*, Vol. 99, pp 807-827, August.

Romer, P. M., (1993), "Implementing a National Technology Strategy with Self-Organizing Industry Investment Boards," in M.N. Baily and C. Winston (eds) **Brookings Papers on Economic Activity**, Vol. 2, pp 345-390.

Grossman, G. M. and E. Helpman, (1991), **Innovation and Growth in the Global Economy**, MIT Press. Chapters 3 and 5.

Daron Acemoglu, "Labor and Capital Augmenting Technical Change," working paper, Department of Economics, MIT.

### **3. Models of Growth as Quality Improvement**

\*Stokey, N. L., (1988), "Learning by Doing and the Introduction of New Goods," *Journal of Political Economy*, Vol. 96, pp 701-717.

\*Stokey, N. L., (1991), "Human Capital, Product Quality and Growth," *Quarterly Journal of Economics*, Vol CVI, Issue 2, pp 587-616, May.

\*Grossman, G. and E. Helpman, (1991), "Quality Ladders and Product Cycles," *Quarterly Journal of Economics*, Vol CVI, Issue 2, pp 557-586, May.

\*Grossman, G. and E. Helpman, (1991), "Quality Ladders in the Theory of Growth," *Review of Economic Studies*, Vol. 58, pp 43-61.

Grossman, G., (1990), "A Model of Quality Competition and Dynamic Comparative Advantage," *Bank of Japan Monetary and Economic Studies*, 8, September.

Grossman, G. M. and E. Helpman, (1991), **Innovation and Growth in the Global Economy**, MIT Press. Chapters 4 and 5.

### **4. The Effects of Policies on Growth**

#### **A. Taxation and Growth**

\*Jones, L. E. and Manuelli, R.E., (1990), "A Convex Model of Equilibrium Growth: Theory and Policy Implications," *Journal of Political Economy*, Vol 98, No 5, pp 1008-38, October.

\*Rebelo, S., (1991), "Long-Run Policy Analysis and Long-Run Growth," *Journal of Political Economy*, 99, No. 3, pp 500-521.

\*Lucas, Robert E., (1990), "Supply Side Economics: An Analytical Review," *Oxford Economic Papers*, 42, 293-316.

\*Jones, L. E., Manuelli, R. and P. E. Rossi, (1993), "Optimal Taxation in Models of Endogenous Growth," *Journal of Political Economy*, Vol 101, No. 3, pp 485-517, August.

\*Rebelo, S. and N. L. Stokey, (1995), "Growth Effects of Flat Tax Rates," *Journal of Political Economy*, 103, 519-550.

Zhu, X., (1992), "Optimal Fiscal Policy in a Stochastic Growth Model," *Journal of Economic Theory*, Vol 58, No. 2, pp 250-290.

King, R. G. and S. Rebelo, (1990), "Public Policy and Growth: Developing Neoclassical Implications," *Journal of Political Economy*, Vol 98, No. 5, Part 2, S126-S150, October.

Barro, R. J. and X. Sala-i-Martin, (1992), "Public Finance in Models of Economic Growth," *Review of Economic Studies*, Vol. 59, pp 645-661

Easterly, W., King, R., Levine, R. and S. Rebelo, (1992), "How Do National Policies Affect Long Run Growth?," World Bank Discussion Paper 164.

Easterly, W., (1993), "How Much Do Distortions Affect Growth?," The World Bank Working Paper.

## **B. Spending and Growth**

\*Barro, R. J., (1990), "Government Spending in a Simple Model of Economic Growth," *Journal of Political Economy*, Vol 98, No. 5, Part 2, S103-S125, October.

\*Glomm, G. and B. Ravikumar, (1992), "Public versus Private Investment in Human Capital: Endogenous Growth and Income Inequality," *Journal of Political Economy*, Vol 100, pp 818-834.

Glomm, G. and B. Ravikumar, (1994), "Public Investment in Infrastructure in a Simple Growth Model," *Journal of Economic Dynamics and Control*, 18, 1173-1188.

## **C. Monetary Policy and Growth**

Jones, L. and R. Manuelli, (1995), "Growth and the Effects of Inflation," *Journal of Economic Dynamics and Control*, 19, No. 8, 1405-1428.

\*Chari, V. V., L. Jones and R. Manuelli, (1995), "The Growth Effects of Monetary Policy," *Federal Reserve Bank of Minneapolis Quarterly Review*, Fall, 18-32.

\*Gomme, P., (1991), "Money and Growth Revisited: Measuring the Cost of Inflation in an Endogenous Growth Model," *Journal of Monetary Economics*, 32, 51-77.

Fischer, S., (1991), "Growth, Macroeconomics and Development," *NBER Macroeconomics Annual 1991*, ed.

O. Blanchard and S. Fischer, MIT Press: Cambridge, MA., 329-364.

Fischer, S., (1993), "The Role of Macroeconomic Factors in Growth," NBER Working Paper # 4565.

Barro, R., (1995), "Inflation and Economic Growth," *Bank of England Quarterly Bulletin*, May, 166-176.

McCandless, G. T. and W. Weber, (1995), "Some Monetary Facts," *Federal Reserve Bank of Minneapolis Quarterly Review*, 19, 2-11.

Roubini, N. and X. Sala-i-Martin, (1992), "A Growth Model of Inflation, Tax Evasion and Financial Repression," NBER working paper #4062.

Haslag, J., (1994), "The Effects of Monetary Policy in a Model with Reserve Requirements," Federal Reserve Bank of Dallas Working Paper.

#### **D. Growth and Financial Intermediation**

Greenwood, J. and B. Jovanovic, (1990), "Financial Development, Growth and the Distribution of Income," *Journal of Political Economy*, Vol. 98, Number 5, Part 1, 1076-1107, October.

Bencivenga, V. and B. Smith, (1991), "Financial Intermediation and Endogenous Growth," *Review of Economic Studies*, 58, pp 195-209.

Bencivenga, V. and B. Smith, (1993), "Some Consequences of Credit Rationing in an Endogenous Growth Model," *Journal of Economic Dynamics and Control*, Vol. 17, pp 97-122,

Sussman, O. and J. Zeira, (1993), "Banking and Development," Working Paper, August.

King, R. G. and R. Levine, (1992), "Financial Indicators and Growth in a Cross Section of Countries," World Bank Working Paper WPS # 819, January.

Bencivenga, V., Smith, B. D. and R. M. Starr, (1993), "Transactions Costs, Technological Choice and Endogenous Growth," CAE Working Paper # 93-08, Cornell University, May.

#### **E. Trade and Growth**

\*Backus, D., P. Kehoe and T. Kehoe, (1992), "In Search of Scale Effects in Trade and Growth," *Journal of Economic Theory*, 58, 377-409.

\*Young, A. (1991), "Learning by Doing and the Dynamic Effects of International Trade," *Quarterly Journal of Economics*, Vol CVI, Issue 2, pp 369-406, May.

\*Stokey, N. L., (1991), "The Volume and Composition of Trade Between Rich and Poor Countries," *Review of Economic Studies*, 58, 63-80.

\*Rivera Batiz, L. and P. Romer, (1991), "Economic Integration and Endogenous Growth," *Quarterly Journal of Economics*, 106, 531-555.

Holmes, T.J. and J.A. Schmitz, (1995), "Resistance to Change and Trade Between Areas," *Federal Reserve Bank of Minneapolis Quarterly Review*.

Gagnon, J. E. and A. K. Rose, (1992), "How Pervasive is the Product Cycle? The Empirical Dynamics of American and Japanese Trade Flows," Working paper no. 3946, NBER.

Krugman, P., (1979), "A Model of Innovation, Technology Transfer, and the World Distribution of Income," *Journal of Political Economy*, 87, 253-266.

Matsuyama, K., (1992), "Agricultural Productivity, Comparative Advantage, and Economic Growth," *Journal of Economic Theory*, 58, 317-334.

Grossman, G. M. and E. Helpman, (1991), **Innovation and Growth in the Global Economy**, MIT Press. Chapter 9.

## **F. Endogenizing Policy**

Kuznets, S., (1955), "Economic Growth and Income Inequality," *American Economic Review*, 1-28.

\*Alesina, A. and D. Rodrik, (1994), "Distributive Politics and Economic Growth," *Quarterly Journal of Economics*, 109, 465-490.

\*Persson, T. and G. Tabellini, (1994), "Is Inequality Harmful for Growth," *American Economic Review*, 84, 600-621.

\*Perotti, R., (1993), "Political Equilibrium, Income Distribution, and Growth," *Review of Economic Studies*, 60, 755-776.

\*Jones, L. and R. Manuelli, (1995), "A Positive Model of Growth and Pollution Controls," SSRI Working Paper.

\*Boldrin, M., (1992), "Public Education and Capital Accumulation," Northwestern University Discussion Paper # 1017, November.

Huber, E., Rueschemeyer, D. and J. D. Stephens, (1993), "The Impact of Economic Development on Democracy," *Journal of Economic Perspectives*, Vol. 7 No. 3, pp 71-85, Summer.

Przewoski, A. and F. Limongi, (1993), "Political Regimes and Economic Growth," *Journal of Economic Perspectives*, Vol. 7 No. 3, pp 51-69, Summer.

Chang, R., (1993), "Political Party Negotiations, Income Distribution and Endogenous Growth," Working Paper, March.

Boldrin, M. and A. Rustichini, (1995), "Political Equilibria With Social Security," Universidad Carlos III working paper, January.

Glomm, G. and B. Ravikumar, (1993), "Endogenous Expenditures in Public Schools and Persistent Growth," Institute for Empirical Macroeconomics Discussion Paper # 85, May.

Sala-i-Martin, X., (1992), "Transfers," NBER WP # 4186, October.

Helliwell, J. F., (1992), "Empirical Linkages Between Democracy and Economic Growth," NBER WP #



4066, May.

Alesina, A., Ozler, S., Roubini, N. and P. Swagel, (1992), "Political Instability and Economic Growth," NBER WP # 4173, September.

De Long, B. and A Shleifer, (1993), "Princes and Merchants: European City Growth Before the Industrial Revolution," NBER WP # 4274, February.

Shleifer, A. and R. W. Vishny, (1993), "Corruption," *Quarterly Journal of Economics*, Vol. CVIII, Issue 3, pp 599-618, August.

Levitt, S. and J. M. Poterba, (1994), "Congressional Distributive Politics and State Economic Performance," NBER WP # 4721, April.

## **5. The Classical Multisector Growth Model and Extensions.**

\*Boldrin, M. and D. Levine, "Growth Under Perfect Competition. Homogeneous Agents", mimeo, 1997a.

\*Dolmas, J., "Endogenous Growth in Multisector Models", *International Economic Review* **37**, 403-421.

Hayek, F. A., *The Pure Theory of Capital*, The Univ. of Chicago Press, Chicago IL (1941), reprinted by Midway Reprint, 1975. (Part III, Chapters XIX-XXV only).

\*Kehoe, T., D. Levine and P. Romer, "Determinacy of Equilibria in Dynamic Models with Finitely Many Consumers", *Journal of Economic Theory*, **50**, 1-20.

\*McKenzie, L.W., "Optimal Economic Growth, Turnpike Theorems and Competitive Dynamics", in K.J. Arrow and M.D. Intriligator (eds.) *Handbook of Mathematical Economics*, vol III, North Holland Publ. C., Amsterdam--New York, 1984.

Pasinetti, L., *Structural Change and Economic Growth*, Cambridge Univ. Press, Cambridge, 1981.

Schumpeter, J., *The Theory of Economic Development*, Harvard Univ. Press, Cambridge, MA, 1934, (1st German edition: 1911).

Solow, R.M., "Investment and Technical Progress", in K.J. Arrow et al. (eds.) *Mathematical Methods in the Social Sciences*, Stanford Univ. Press, Stanford, CA, 1960.

Solow, R.M. et al., "Neoclassical Growth with Fixed Factor Proportions", *Review of Economic Studies*, **33** (1966), 79-115.

Weitzman, M.L., "Recombinant Growth", Harvard Institute of Economic Research, D.P. no. 1722, May 1995.

## 6. Overlapping Generations Models of Growth.

\*Azariadis, C. and A. Drazen, (1990), "Threshold Externalities in Economic Development," *Quarterly Journal of Economics*, **105**, 501-526.

Giuseppe Bertola, "Factor Shares and Savings in Endogenous Growth", *American Economic Review* **83** (1993), 1184-1198.

Giuseppe Bertola, "Factor Shares in OLG Models of Growth", *European Economic Review* **40** (1996), 1541-1560.

\*Boldrin, M., (1992), "Dynamic Externalities, Multiple Equilibria and Growth," *Journal of Economic Theory*, Vol. **58**, No. 2, pp 198-218, December.

Caballe, J. "Endogenous Growth, Human Capital and Bequests in a Life-Cycle Model", *Oxford Economic Papers* **47**, 156-181.

Chari, V.V. and H. Hopenhayn, "Vintage Human Capital, Growth, and the Diffusion of New Technology", *Journal of Political Economy* **99** (1991), 1142-1165.

\*Jones, L. E. and R. Manuelli, (1992), "Finite Lifetimes and Growth", *Journal of Economic Theory*, Vol **58**, No 2, pp 171-197, December.

Fisher, E., (1992), "Sustained Growth in the Model of Overlapping Generations," *Journal of Economic Theory*, Vol 58, No 1, pp77-92.

## 7. Growth Cycles.

\*Aghion, P. and P. Howitt, (1992), "A Model of Growth Through Creative Destruction," *Econometrica*, Vol 60, No. 2, pp 323-351, March.

Aghion, P. and P. Howitt, "Growth and Unemployment", *Review of Economic Studies*, **61**, 477-494.

Andolfatto, D. and G.M. MacDonald, "Endogenous Technological Change, Growth, and Aggregate Fluctuations", mimeo, Univ. of Waterloo, w.p. no. 9504, (1993).

Boldrin, M. and D. Levine, "Growth Cycles and Market Crashes", mimeo, 1997, (forthcoming JET).

Boldrin, M. et al., "A Chaotic Map Arising in the Theory of Endogenous Growth", mimeo, Northwestern University October 1993 (new version, 1999, forthcoming in JET with different title)

Boldrin, M. and A. Rustichini, "Growth and Indeterminacy in Dynamic Models with Externalities", *Econometrica* **62**, 323-342.

Caballero, R. and M. Hammour, "The Cleansing Effect of Recessions", *American Economic* **84** (1994), 1350-1368.

Cooley, T. and E. Prescott, "Economic Growth and Business Cycles" in T. Cooley *Frontiers of Business Cycle Research*, Princeton Univ. Press, Princeton, NJ, 1995.

Corriveau, L., "Entrepreneurs, Growth and Cycles", *Economica*, **61** (1994), 1-15.

Lucas, R. E. Jr., "Industrial Revolution: Past and Future", mimeo, University of Chicago, November 1996.

Mashiyama, K., "The Dynamic Structure of the Endogenous Growth Model with Increasing Returns", mimeo, Meiji Gakuin University, Tokyo, May 1994.

Matsuyama, K., "Growth Through Cycles", mimeo, Northwestern University, October 1996.

Shleifer, A., "Implementation Cycles", *Journal of Political Economy* **94** (1986), 1163-1190.

## **8. Indeterminacy of Equilibria in Growth Models**

Barro, R. J. and X. Sala-i-Martin, (1992), "Convergence," *Journal of Political Economy*, vol 100, No 2, pp 223-251.

Barro, R. J. and X. Sala-i-Martin, (1991), "Convergence Across States and Regions," *Brookings Papers on Economic Activity*, 1, 107-158.

Mulligan, C. And X. Sala-i-Martin, (1992), "Transitional Dynamics in a Model of Endogenous Growth," *Quarterly Journal of Economics*, 108, 739-773.

Benhabib, J. and R. Perli, (1994), "Uniqueness and Indeterminacy: Transitional Dynamics in a Model of Endogenous Growth," *Journal of Economic Theory*, 63, 113-142.

## **9. Other Topics That we Won't Have Time For**

### **A. Population Growth and Output Growth**

Becker, G., Murphy, K. M. and R. Tamura, (1990), "Human Capital, Fertility and Economic Growth," *Journal of Political Economy*, Vol. 98, No. 5, Part 2, S12-S37, October.

Rosenzweig, M. R., (1990), "Population Growth and Human Capital Investments: Theory and Evidence," *Journal of Political Economy*, Vol. 98, No. 5, Part 2, S38-S70, October.

Kremer, M., (1993), "Population Growth and Technological Change: One Million B.C. to 1990," *Quarterly Journal of Economics*, Vol CVIII, Issue 3, pp 681-716, August.

### **B. The Growth Effects of Property Rights**

Benhabib, J. and A. Rustichini, (1991), "Social Conflict, Growth and Income Distribution," Working Paper, May.

Tornell, A., (1993), "Economic Growth and Decline with Endogenous Property Rights," NBER WP # 4354, May.

### **C. Cities, Neighborhood Effects and Growth**

Glaeser, E. L., Kallal, H. D., Scheinkman, J. A. and A. Shleifer, (1992), "Growth in Cities", *Journal of Political Economy*, Vol 100, No. 6, pp 1126-1152.

Benabou, R., (1992), "Workings of a City: Location, Education, and Production," *Quarterly Journal of Economics*, Vol CVIII, Issue 3, pp 619-652, August.

Durlauf, S. N., (1994), "Neighborhood Feedbacks, Endogenous Stratification, and Income Inequality," SSRI Working Paper 9328R, April.

Benabou, R., (1993), "Heterogeneity, Stratification and Growth," NBER WP # 4311, April.

Durlauf, S. N., (1992), "A Theory of Persistent Income Inequality," NBER WP # 4056, April.

Benabou, R., (1994), "Education, Income Distribution and Growth: The Local Connection," Working Paper.

Barro, R. J. and X. Sala-i-Martin, (1992), "Regional Growth and Migration: A Japan-U.S. Comparison," NBER WP # 4038, March.

Rauch, J., (1993), "Does History Matter Only When It Matters Little? The Case of City-Industry Location," NBER WP # 4312, April.

Rauch, J., (1991), "Productivity Gains from Geographic Concentration of Human Capital: Evidence From the Cities," NBER WP # 3905, November.

Henderson, V., Kuncoro, A. and M. Turner, (1992), "Industrial Development in Cities," NBER WP # 4178, October.

Ades, A. and E. L. Glaeser, (1994), "Trade and Circuses: Explaining Urban Giants," NBER WP # 4715, April.

Glaeser, E. L. and D. C. Mare, (1994), "Cities and Skills," NBER WP # 4728, May.

Henderson, V., (1994), "Externalities and Industrial Development," NBER WP # 4730, May.

Eaton, J. and Z. Eckstein, (1993), "Cities and Growth: Theory and Evidence From France and Japan," Boston University Working Paper, December.

Glaeser, E., Scheinkman, J. and A. Shleifer, (1995), "Economic Growth in a Cross Section of Cities," NBER WP # 5013, February.

### **D. Development Traps**

Easterly, W., (1994), "Economic Stagnation, Fixed Factors and Policy Thresholds," *Journal of Monetary Economics*, Vol 33, pp 525-557.

Ciccone, A. and K. Matsuyama, (1993), "Start-Up Costs and Pecuniary Externalities as Barriers to Economic Development," NBER WP # 4363, May.

Ciccone, A., (1993), "Human Capital and Technical Progress: Stagnation, Transition and Growth," Working Paper, November.

### **E. Transitions Paths**

Caballe, J. and M. Santos, (1993), "On Endogenous Growth with Physical and Human Capital," *Journal of Political Economy*, 101, No. 6, 1042-1068.

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