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Implications of Human Capital Public Investments for Regional Unemployment in Indiana

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Abstract: This study investigates the effect of human capital investments - public expenditures for education, training and employment - on the regional unemployment in the counties of Indiana. Using county-level data for the year of 2000 and spatial econometric techniques, the unemployment rate equation is estimated taking into account the spatial dependence of regional labor markets conditions, while controlling for the industry mix, education attainment, wages, net commuting, unemployment insurance benefits and human capital public investments. The results show that the county-level applied human capital investments can be a policy that decreases the regional unemployment rate. Evaluated at the sample mean value of net commuting rate of -0.15, the regional unemployment rate is expected to decrease by 0.33 percentage point with a ten million dollars human capital investment in a county. The greatest impact of human capital investments is in counties with very low net commuting rates. A county with minimum commuting benefits more from human capital investments than a county with maximum commuting: a ten million dollars investment in human capital in the region is expected to decrease the regional unemployment rate by 0.46 and 0.10 percentage point respectively.

1. Introduction

In this study I adopt a regional economic approach in order to investigate the public investment in human capital - e.g., public expenditures for education, training and employment - effect on the regional unemployment rate in the state of Indiana. The regions investigated are the counties of Indiana for the year of 2000. Taking into account the spatial correlation of regional unemployment, which removes the bias in the parameter estimates, allows a more accurate specification of the regression model and confidence in the results. Using cross-sectional spatial econometric techniques, the unemployment rate equation is estimated taking into account the spatial dependence of regional labor market conditions, while controlling for the industry mix, education attainment, wages, net commuting, unemployment insurance benefits and human capital public investments. The results show that county-level applied human capital investments can be a policy that decreases the regional unemployment rate. Evaluated at the sample mean value of net commuting rate of –0.15, a ten million dollars human capital investment in a county is expected to decrease the regional unemployment rate by 0.33 percentage point. The greatest impact of human capital public investments is in counties with very low net commuting rates. A county with minimum commuting benefits more from human capital investments: a ten million dollars investment in human capital in the region is expected to decrease the regional unemployment rate by 0.46 percentage point.

The role played by human capital in fostering regional growth is a major topic for research (Lucas 1988; Nijkamp and Poot 1988; Martin and Sunley 1998) as current growth theories stress the role of educational investments in promoting regional economic growth. Human capital investments - expenditures on education, training, health information and labor mobility (Weisbrod 1961) – has been acknowledged as generating spillover effects, increasing the regional labor force and regional capital stock productivity (Lucas 1988).

In order to understand the relationships between human capital investments and the geography of growth, it is necessary to consider and understand the links between human capital investments and employment both within and between regions, in order to ensure that public policy regarding human capital can be effective as means of promoting regional economic development. The effect on unemployment of human capital investments is relevant in relation to labor market policy and individual welfare, throwing light on the unemployment rate, which is one of the most used indicators of the socio-economic balance of a country or region.

2. Literature review

There is an extensive literature estimating the impact of education expenditures on personal income (Bensi at al. 2004); economic growth (Keller 2006); income inequality (Sylwester 2002; Biggs and Jayasri 1999); school enrollment (Lopez-Acevedo and Salinas 2000) and poverty (Gustafsson and Li 2004). Other studies look at the impact of public investment in particular support program on firm level productivity (Bhorat and Lundall 2004; Marshall et al. 1993; Smallbone et al. 1993); individual earnings, employment probabilities (Lechner 2000; Jenkins et al. 2003) and welfare of the disabled (Chatterjee and Mitra 1998). The empirical evidence of firm-sponsored investment in its employees' human capital (on-the job training) and off-the job training find a negative correlation between on-the-job training and job mobility and a positive correlation between off-the-job training and job mobility (Loewenstein and Spletzer 1999; Lynch 1991; Zweimuller and Winter-Ebmer 2000); negative relationship between firm-sponsored training and starting wages but positive relationship to wage growth (Veum 1999).

The empirical work on the relationship between public investments in human capital and regional unemployment is scarce and do no provide consistent results. Doeringer et al. (1987), Sander and Schaeffer (1991) find a weak and insignificant effect of education expenditures on employment in the areas within Massachusetts and US urban counties respectively. Quan and Beck (1987) find positive and significant effects of education expenditures on the level of wages and employment for the Northeast US states and the reverse for the Southeast and Southwest US states. Other studies find a positive relationship between education expenditures and employment growth (Helms 1985; Vasylenko and McGuire 1985).

In all cases however, the spatial interaction among regional labor markets is ignored and no attention is paid to the problem of spatial dependence and spatial correlation of regional economies. Since regions are open, small and highly interconnected through migration, commuting, trade, the regional labor markets show a high degree of interaction and unemployment is likely to be spatially correlated (Molho 1995). Neglecting such spatial dependence lead to biased parameter estimates, misleading significance levels and sub optimal forecasts (Anselin 1988b).

Several articles analyzed different aspects of the regional labor markets from a spatial perspective - see Karlsson and Haynes (2002) for a review, and more recent articles by Zhang et al. (2006) and Elhorst (2004) – but none looks into the impact of 'soft' investments on regional unemployment.

3. Methods and data

3.1 Theoretical model of unemployment

The empirical model draws on Elhorst (2003) and controls for other variables that affect the county-level employment.

Elhorst (2003) provides an integrated review of the theories and empirical explanations of unemployment. In each theoretical model, the main determinants of regional unemployment rate are found to be labor supply, labor demand, and wage-setting factors. This specification illustrates the reduced form equation that different theoretical models (sometimes partially) result in, giving a clear-cut direction in which the explanatory variables must be searched for. The theoretical explanation of the equilibrium unemployment rate determinants is embedded in a richer theoretical framework, with the Blanchard and Katz (1992) theoretical model being the most extensive in this field currently available.

On the other hand, the empirical studies provide an understanding of the explanatory variables involved in explaining the regional unemployment rate. On the basis of analyzing 41 empirical studies explaining the regional unemployment, Elhorst (2003) finds that the most commonly used explanatory variables used in the empirical work are: natural change in the labor force (demography and the population), net-in migration and commuting, wages, industry mix, educational attainment of the population and economic and social barriers (e.g. barriers created by the housing market, unemployment insurance, labor market tightness). The best solution in modeling the determinants of regional unemployment should be a strong theoretical basis (with the Blanchard and Katz model the most likely candidate) grouped with empirical insights of the explanatory variables involved that together help to reduce the weaknesses in each other (for a thorough discussion see Elhorst 2003).

Workers commuting across regions influence the effect of human capital investments on the county unemployment, since individuals that benefited form human capital investments in one county might migrate to another county. A county providing high investments in human capital to its residents might loose much of human capital because of commuting or migration. To account for this effect, the interaction between human capital investment and net commuting was included in the regression. Therefore, the regional employment equation used in this research is illustrated to depend on net commuting, wages, industry mix, educational attainment of the population, unemployment insurance, human capital public investments and interaction term between human capital investments and net commuting.

3.2 Data and empirical model

This study is undertaken with 2000-year data for Indiana and the units of analysis are the counties in Indiana. County-level data (Table 1) was taken from the US Bureau of Economic Analysis (BEA), US Census Bureau and STATS Indiana. With regard to the industrial mix, I controlled for the share of farm and public services in employment. I define human capital public investments as Federal and State payments for educational (e.g., fellowships, grants), employment and training assistance. A detailed description of the data and sources is provided in Appendix A. The model to be estimated is:

$$U = \beta + \beta_2 FARM + \beta_3 PUBSERV + \beta_4 HC + \beta_5 WAGE + \beta_6 HCEXP + \\ + \beta_7 NCOMM + \beta_8 UINS + \beta_9 HCEXP \times NCOMM + \varepsilon \quad (1)$$

3.3 Spatial econometric models

The most frequently used spatial processes models are the spatial autoregressive error model and the spatial lag model (Anselin and Hudak 1992). The spatial (autoregressive) error model reads as:

$$y = X\beta + (I - \lambda W)^{-1}\varepsilon, \quad (2)$$

where y is an $(n \times 1)$ vector with observations on the dependent variable, X the $(n \times k)$ matrix containing the explanatory variables, β the $(k \times 1)$ vector with coefficient parameters, ε a $(n \times 1)$ vector of i.i.d. errors, and λ the spatial autoregressive parameter. The spatial weights matrix W describes the spatial arrangement of the spatial units and w_{ij} is the (i,j)-th th element of the weights matrix $(i,j = 1,\ldots,n)$ where $w_{ij} = 1$ if i and j are neighbors and $w_{ij} = 0$ otherwise (including the diagonal elements). The error covariance matrix is given by $\sigma^2\left[(I - \lambda W)'(I - \lambda W)\right]^{-1}$, showing that heteroskedasticity is present even if the error terms are homoskedastic.

Table 1. The variable definitions and descriptive statistics

Variable	Definition	Mean	Stdev	Min	Max
U	The regional unemployment rate (%)	3.11	0.69	1.80	5.00
FARM	Share of farm sector in employment	0.06	0.04	0.00	0.21
PUBSERV	Share of public services in employment	0.11	0.04	0.05	0.25
HC	Human capital (educational attainment), percent of population 25 years or higher with at least Bachelor degree	14.60	6.68	7.60	48.90
WAGE	Average wage per job, thousands of dollars	26.72	4.31	18.51	40.15
HCEXP	Human capital public investments, tens of millions of dollars	1.67	3.29	0.13	27.94
NCOMM	Net commuting rate, share of net commuting in the number of population in employment	-0.15	0.21	-0.53	0.49
UINS	Unemployment insurance compensation, millions of dollars	3.28	5.82	0.19	43.97

This applies likewise to the spatial lag model,

$$y = \rho Wy + X\beta + \varepsilon, \tag{3}$$

where ρ is the spatial autoregressive parameter.
Two types of interpretation exist with regard to the spatial dependence: substantive spatial dependence and nuisance spatial dependence. The substantive spatial dependence implies that the value of an attribute at one location is jointly determined with that at other locations and is expressed as the spatial lag model. The substantive spatial dependence is seen as an indication of behavioral, political or economic process characterized by spatial externalities. For an application focusing on regional unemployment rate, an interpretation of the spatial lag model is offered by Molho (1995): starting from a steady-state regional unemployment rate, a region-specific shock will not only affect the respective labor market, but spillover to neighboring regions. This implies that unemployment in one county depends on the unemployment in the neighboring counties. In contrast, the nuisance spatial dependence is referred to the autocorrelation in the error term and is expressed as the spatial error model, implying that the value of the residuals in one region depends on the residuals value in the neighboring regions.

The different specification of spatial dependence considered to adequately represent the data generating process has different implications for estimation and statistical inference. Estimating a model that ignores spatial error autocorrelation by means of Ordinary Least Squares (OLS) produce unbiased and consistent parameter estimates, but the estimator of variance is biased and inefficient. Erroneously omitting a spatially autocorrelated dependent variable from the explanatory variables causes the OLS estimator to be biased and inconsistent (Anselin 1988b). However, Lee (2002) showed that under the spatial scenario in which each spatial unit can be influenced aggregately by a significant portion of units in the population, the OLS estimator of the models with spatially autocorrelated dependent variable in the explanatory variables can be consistent and as relatively efficient as the maximum likelihood and instrumental variables estimators regardless of whether or not the disturbances are spatially correlated. Estimation of spatial econometric models can be performed by maximum likelihood (ML) or instrumental variables (Anselin 1988a).

4. Data analysis

4.1 Exploratory spatial analysis

Visual inspection of the map in Figure 1 shows that counties with high (low) unemployment rates are clustered: counties with relative low unemployment rates are clustered in the center and NE, while high unemployment rates are in the South and SW of Indiana. There is not much difference between Indiana counties unemployment rates (standard deviation amounts to 0.69), with a mean of 3.11%.

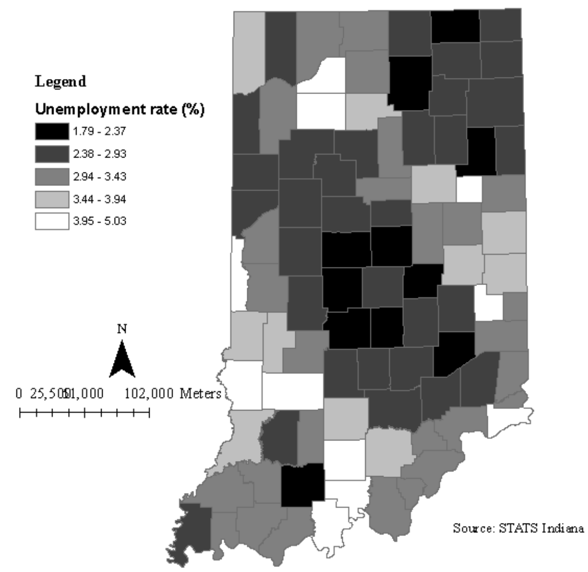

Figure 1 Unemployment rate, Indiana 2000.

To evaluate the significance of the spatial clustering pattern by means of the Moran's I statistic, the spatial weights matrix was defined according to the queen criterion, implying that counties are neighbors if they have a common border in the horizontal, vertical, or share a common vertex, up to the 1 "bands" of neighbors. When the weights matrix is row standardized, the spatial lagged unemployment rate variable (W_Unemployment rate) is the average of the unemployment rates in the neighboring counties. The sign of Moran's I statistic (Figure 2) for the regional unemployment rate is positive (0.35) and highly significant (at 1% level), so that high (low) values are surrounded by high (low) values in neighboring counties, indicating positive spatial correlation of regional unemployment rates.

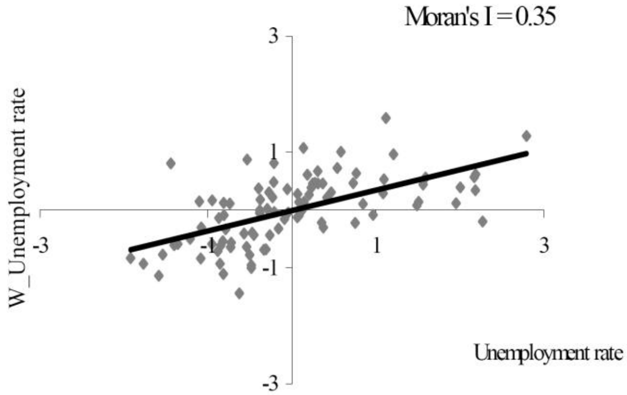

Figure 2. Moran's I of unemployment rates

4.2 Results

The first column of table 2 refers to the OLS estimation of regional unemployment rates. The low condition number (CN) points that the degree of multicolinearity among the regressors is moderate enabling us to be more confident in the accuracy of the coefficients estimates. The diagnostic tests for spatial dependence point to the presence of spatial autocorrelation in the dependent variable. The OLS is inconsistent (Anselin 1988b) due to spatial lag simultaneity, and therefore, I have not commented on the OLS parameters values. The combination of Lagrange Multiplier (LM) tests indicates that a spatial lag model is likely to be the correct specification because the robust LM error (LM-ERR) and LM lag (LM-LAG) tests are both significant but the robust LM-LAG test has a higher value than the robust LM-ERR test (Anselin et al. 1996). Because the combination of LM tests point in the direction of the spatial lag model, I estimate it using ML methods, with results being reported in the second column of Table 2.

The estimate for the autoregressive parameter of the spatial process shown next to W_Unemployment rate is on a magnitude of 0.51 and highly significant, indicating spatial interaction among regional labor markets conditions for the counties of Indiana. The central result is a negative coefficient of the human capital public investments and a positive coefficient of human capital public investments and net commuting interaction term, both of which are statistically significant (5% level) for explaining the unemployment rate. Figure 3 shows a lower estimated decrease in the regional unemployment with higher levels of the net commuting rate, for a human capital investment of ten million dollars. Evaluated at the sample mean value of net commuting, the economic magnitude of human capital investments direct effect on unemployment is –0.33, implying that each 10 million dollars of human capital investments in a county is expected to decrease the regional unemployment rate by 0.33 percentage point, ceteris paribus. Evaluated at the sample minimum of net commuting of –0.53 (for Warren county), the economic magnitude of human capital investments direct effect on unemployment is –0.46, so that each 10 million dollars spent on human capital investments in a county is expected to decrease the regional unemployment rate by 0.46 percentage point. At the sample maximum of net commuting of 0.49 (for Martin county), the economic magnitude of human capital investments direct effect on unemployment is -0.10, so that each 10 million dollars spent on human capital investments in a county is expected to decrease the regional unemployment rate by 0.10 percentage point.

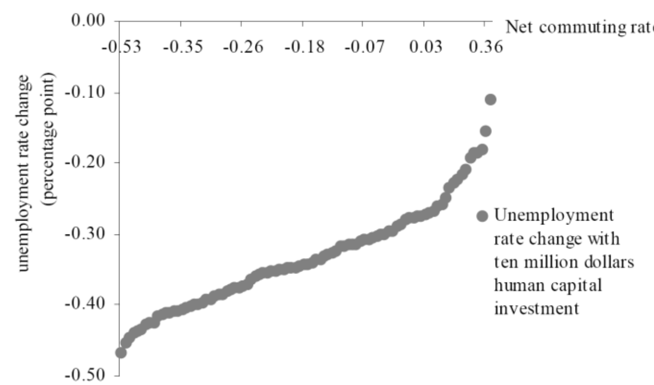

Figure 3. Estimated effect of human capital investments on unemployment

The population's educational attainment (human capital) appears to have a downward and significant effect on the unemployment rate, suggesting more stable employment patterns of the better-educated people. A 1% increase in the population with at least Bachelor Degree is expected to decrease the regional unemployment rate by 0.02 percentage point. The positive and statistically significant (at 10% level) coefficient on the wage variable is in accordance with the neoclassical economics argument. The generosity of unemployment insurance benefit is positively and statistically significant related to the regional unemployment rate (regional unemployment rate is expected to be 0.13 percentage point higher with each million dollars spent for unemployment insurance in a county).

Table 2. Regional unemployment rates (dependent variable).

Independent variables	OLS	SPATIAL LAG (ML)
Intercept	2.037 (0.624)***	0.527 (0.593)
Share farming	0.158 (2.286)	-0.454 (1.929)
Share public services	7.245 (1.645)***	5.272 (1.415)***
Human capital	-0.023 (0.015)	-0.025 (0.012)**
Wage	0.022 (0.018)	0.027 (0.015)*
Human capital public expenditures	-0.409*** (0.137)	-0.280 (0.117)**
Human capital public expenditures × Net commuting	0.429 (0.205)**	0.352 (0.173)**
Net commuting	-0.360 (0.436)	-0.649 (0.368)*
Unemployment insurance	0.185 (0.055)***	0.130 (0.047)***
W_Unemployment rate		0.511 (0.102) ***
CN	32	
R^2	0.407	0.534
LIK	-71.453	-63.246
Robust LM-ERR	5.721**	
Robust LM-LAG	16.946***	

Note: Significance is indicated with ***, **, * for the 1, 5, and 10% level.
The meaning of the abbreviations is: CN for multicollinearity condition number

5. Conclusions

This study adopts a regional economic approach to investigate the effect of human capital public investments - expenditures for education, training and employment - on the unemployment rate in the counties of Indiana. Using county-level data for the year of 2000 and spatial econometric techniques, the unemployment rate equation is estimated taking into account the spatial dependence of regional labor markets conditions, while controlling for the industry mix, education attainment, wages, net commuting, unemployment insurance benefits and human capital public investments.

The effect of human capital public investments on unemployment is relevant for public policy aimed at reducing regional unemployment through better labor market allocation of human capital investments. This paper shows that the county-level applied human capital investments can be a policy that decreases the regional unemployment rate. The results show that, evaluated at the sample mean value of net commuting rate of –0.15, regional unemployment rate is expected to decrease by 0.33 percentage point with a ten million dollars human capital investment in a county. The greatest impact of human capital public investments is in counties with very low net commuting rates. A county with minimum commuting benefits more from human capital investments: a ten million dollars investment in human capital in the region is expected to decrease the regional unemployment rate by 0.46 percentage point.

To better measure the effect of human capital expenditures on regional unemployment, more disaggregated data for each category of education, training and employment programs on Federal and State government human capital expenditures are probably required. The results of this study should be interpreted with caution, as the analysis is based on a cross-sectional data. An analysis using a panel data set would probably give more precise results.

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Bibliography

Anselin, L. 1988a. Lagrange multiplier test diagnostics for spatial dependence and spatial heterogeneity. *Geographical Analysis* 20: 1-17.

Anselin, L. 1988b. *Spatial Econometrics: Methods and Models*. Dordrecht: Kluwer Academic Press.

Anselin, L., A. Bera, R. Florax and M. Yoon. 1996. Simple diagnostic tests for spatial dependence. *Regional Science and Urban Economics* 26(1): 77-104.

Anselin, L. and S. Hudak. 1992. Spatial econometrics in practice, a review of software options. *Regional Science and Urban Economics* 22(3): 509-536.

Bensi, M., D. Black and M. Dowd. 2004. The education/growth relationship: evidence from real state panel data. *Contemporary Economic Policy* 22(2): 281-298.

Bhorat, H. and P. Lundall. 2004. Employment, wages and skills development – firm specific effects – evidence from a firm survey in South Africa. *South African Journal of Economics* 72(5): 1023-1056.

Biggs, M. and D. Jayasri. 1999. The distributional effects of educational expenditures. *National Institute Economic Review* 169(1): 68-77.

Blanchard, O. and L. Katz. 1992. Regional evolutions. *Brookings Papers on Economic Activity*, 1992(1): 1-75.

Chatterjee, L. and M. Mitra. 1998. Evolution of federal and state policies for persons with disability in the United States: efficiency and welfare. *The Annals of Regional Science* 32(3): 347-365.

Doeringer, P., D. Terkla and G. Topakian. 1987. *Invisible Factors in Local Economic Development*. New York: Oxford University Press.

Elhorst, P. 2003. The mystery of regional unemployment differentials: Theoretical and empirical explanations. *Journal of Economic Surveys* 17(5): 709-748.

Elhorst, P. 2004. The persistence of unemployment and regional unemployment differentials in a growing economy. In: Boneschansker E., J. van-Dijk, L.G.J. Jansma and K.H.A. Verhaar (eds.) *Cultural Uniqueness and Regional Economy*. Leeuwarden: Fryske Akademy. Pp. 211-226.

Gustafsson, B. and S. Li. 2004. Expenditures on education and health care and poverty in rural China. *China Economic Review* 15(3): 292-301.

Helms, J. 1985. The effect of state and local taxes on economic growth: a time-series cross-section approach. *Review of Economics and Statistics* 67(4): 574-582.

Jenkins, A., A. Vignoles, A. Wolf and F. Galindo-Rueda. 2003. The determinants and labour market effects of lifelong learning. *Applied Economics* 35(16): 1711-1721.

Karlsson, C. and K. Haynes. 2002. Regional labor markets in transition. *Papers in Regional Science* 81(3): 301-304.

Keller, K. 2006. Investment in primary, secondary, and higher education and the effects on economic growth. *Contemporary Economic Policy* 24(1): 18-34.

Lechner M. 2000. An evaluation of public-sector-sponsored continuous vocational training programs in East Germany. *Journal of Human Resources* 35(2): 347-375.

Lee, L. 2002. Consistency and efficiency of least squares estimation for mixed regressive, spatial autoregressive models. *Econometric Theory* 18(2): 252-277.

Loewenstein, M. and J. Spletzer. 1999. General and specific training: evidence and implications. *Journal of Human Resources* 34(4): 710-733.

Lopez-Acevedo, G. and A. Salinas. 2000. Marginal willingness to pay for education and the determinants of enrollment in Mexico. World Bank, Policy Research Working Paper Series 2405. Available at <econ.worldbank.org/docs.1160.pdf>.

Lucas, R. 1988. On the mechanics of economic development. *Journal of Monetary Economics* 22 (1): 3-42.

Lynch, L. 1991. The role of off-the-job vs. on-the-job training for the mobility of women workers. *American Economic Review* 81(2): 151-156.

Marshall, N., C. Alderman, C. Wong and A. Thwaites. 1993. The impact of government-assisted management training and development on small and medium-sized enterprises in Britain. *Environment and Planning* 11(3): 331-348.

Martin, P. and P. Sunley. 1998. Slow convergence? The new endogenous growth theory and regional development. *Economic Geography* 74(3): 201-227.

Molho, I. 1995. Spatial autocorrelation in British unemployment. *Journal of Regional Science* 35(4): 641-658.

Nijkamp, P. and J. Poot. 1998. Spatial perspectives on new theories of economic growth. *Annals of Regional Science* 32 (1): 7-37.

Quan, N., Beck, J. (1987). Public education expenditures and state economics growth: Northeast and Sunbelt regions. *Southern Economic Journal* 54(2): 361-376.

Sander, W. and P. Schaffer. 1991. Schooling and urban employment growth. *Journal of Economics and Business* 43(1): 69-77.

Smallbone, D., D. North and R. Leigh. 1993. The use of external assistance by mature SME's in the UK: some policy implications. *Entrepreneurship and Regional Development* 5: 279-295.

Sylwester, K. 2002. Can education expenditures reduce income inequality? *Economics of Education Review* 21(1): 43-52.

Vasylenko, M. and T. Mcguire. 1985. Jobs and taxes: the effect of business climate on states' employment growth rates. *National Tax Journal* 38(4): 497-511.

Veum, J. 1999. Training, wages and human capital model. *Southern Economic Journal* 65(3): 526:538.

Weisbrod, B. 1961. The valuation of human capital. *The Journal of Political Economy* 69(5): 425-436.

Zagler, M. 2003. Long-run growth implications of government expenditures in Austria. Available at <www.staatsschuldenausschuss.at/de/img/zagler_tcm163-42370.pdf>.

Zhang, J., P. Elhorst and A. van Witteloostuijn. 2006. The determinants of regional inequality in China: a spatial econometric approach. *Economic Research Journal* 41(10).

Zweimuller, J. and R. Winter-Ebmer. 2000. Firm-specific training: consequences for job mobility. Department of Economics, Johannes Kepler University Linz, Austria Working paper number 2000-06. Available at <www.econ.jku.at/papers/2000/wp0006.pdf>.

Appendix A

Data and variables description

Variable	Definition	Source
Unemployment rate	$UE_i = \frac{U_i}{LF_i}100$ U_i : Number of unemployed in county i LF_i : Labor force in county i	STATS Indiana
Farm employment	$FARM_i = \frac{farm_i}{L_i}100$ $farm_i$: Farm employment in county i (number of jobs) L_i : Total full time and part-time employment	BEA
Public services employment	$PUBSERV_i = \frac{pubserv_i}{L_i}100$ $pubserv_i$: State and local government employment in county i (number of jobs) L_i : Total full time and part-time employment	BEA
Human capital (Educational attainment)	Percent of population 25 years or older with at least Bachelor degree	US Census Bureau 2000
Wage	Average wage per job, thousands of dollars	BEA CA-34, 10
Net commuting rate	$NCOMM_i = \frac{COMM_i}{E_i}100$ $COMM_i$: Net commuting: People living out of the county i and working in county i - people living in county i and working out of the county i E_i Number in employment	US Census Bureau 2000 STATS Indiana
Unemployment insurance	Unemployment insurance compensation in county i , millions of dollars	BEA
Human capital public investments	Federal and State payments to individuals and non-profit institutions for educational (fellowships), employment and training assistance, tens of millions of dollars	BEA CA-25 lines 280, 300, 310, 320