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Regional Evidence on the Finance-Growth Nexus

by

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Abstract

The Finance-Growth Nexus is a classical source of debate among economists. This contribution offers regional evidence on this issue in order to see if it can meet the data within a 140 years old economic union – Italy -, in the ideal context for its main competitor - New Economic Geography - and in order to avoid pooling between developed and developing countries. The results for this application support the view that finance leads growth, reject its possible endogeneity and shows its robustness even in presence of spatial unobserved heterogeneity.

Jel codes: O18, O16, C31.

Keywords: Finance, Growth, Regions.

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1 Introduction

The relationship between financial development and economic growth spurred a long lasting debate among economists. Classical contributions, like Bagehot (1873) and Hicks (1969), argue that innovations in the financial structure in Britain, such as the introduction of the joint-stock company and limited liability, favoured the first industrial revolution by easing the funding of large scale investments. By the same token, Schumpeter (1934) argues that financial development spurs economic growth, not only making capital accumulation easier, but also favouring the funding of innovations.

However, sceptical contributions have been offered too. It is well known Joan Robinson's dictum: "where enterprise leads, finance follows" (Robinson, 1952). Another well known financial development sceptic is Lucas (1988), dubbing as "over-stressed" the causality relationship between finance and growth.

The finance-growth nexus has not received less attention in more recent years. It is possible to distinguish various approaches that have been reviewed in Levine (2004) and in Levine (2003), including both theoretical and empirical studies. The latter ones ranged from historical case studies, to firm-level studies, to time series studies on a single country or on a limited number of countries, to cross-sectional and panel data analyses.

Within the cross-sectional and panel data analyses, there have been those focusing on industries, like Rajan and Zingales (1998), and those focusing on countries. The literature review that follows deals mainly with country cross-sectional or panel data studies considering financial development as improvements in the working of banks, however there are also other contributions considering financial development as institutional changes or deepening of the stock market (for instance Levine and Zervos, 1998 or Beck and Levine, 2004 and others reviewed in Levine, 2004).

The aim of this paper is to offer new perspectives on the long-lasting debate above by analysing the effect of financial development, meant as enlargement of the banking sector, on growth by using a regional dataset. In this way, it will be possible to avoid pooling developed and developing countries, where the economic mechanisms at stake may be greatly different. However, by focusing on a country, like Italy, where regional disparities have been a long-lasting issue since the achievement of national unity in 1860, it will be possible to keep a substantial variability within the sample.

Moreover, Driffil (2003) claims that the New Economic Geography, relying on agglomeration and transport costs, may offer more valuable

insights than the theories of the link between finance and growth to explain economic growth. Therefore, a regional dataset may offer valid tests to thoroughly assess the finance-growth nexus, all the more that, as argued by Guiso, Sapienza and Zingales (2004), it represents a limit condition for international finance markets given the high degree of integration of the various territorial units. Furthermore, with difference to Guiso, Sapienza and Zingales (2004), I do not consider indicators of financial development deriving from micro data, rather, as it will appear later, I consider aggregate ones, directly concerning the size of the banking sector.

Finally, given that the Bank of Italy collects financial data distinguishing between long and short term credit, it will be possible to assess the impact of different financial structures on the local growth rate. This is particularly interesting because studies on financial structure usually focus on its effect on firm size or on the opportunities for firm growth more than on its aggregate effect on economic growth performance as done here (Caprio and Demirgüç-Kunt, 1997).

The rest of this paper is structured as follows. First there will be a brief review of cross-section and panel data studies on the link between finance and growth and on firm debt structure in order to grasp what could be the best specification for a model trying to explain these issues. Afterwards, I will illustrate the collected data. Finally, I will consider a cross-sectional analysis trying to understand if the level of financial development at the beginning of the period of observation can be considered as a good predictor of the subsequent local growth rate. Given the regional nature of the dataset, it is not possible to neglect the problem of spatial correlation between the different provinces. Therefore, I will explicitly test for spatial correlation in the residuals, that might lead to biased standard errors and unreliable t-statistics.

Furthermore, in order to overcome the problems highlighted by Driffil (2003) and Manning (2003), I will group provinces in accordance to the region they belong to and I will make use of the one way error component model in order to control for possible omitted variables, also testing if the Random Effect or the Fixed Effect estimator fits the data better and providing different estimators in order to check for potential model misspecifications (Baltagi, 2003). I will also compare the instrumental variable estimator with the other estimators in order to account for potential endogeneity problems.

2 Literature Review

Since the seminal contributions of King and Levine (1993a, b) new attention has been devoted to the issue whether financial development is

either a premise or a consequence of economic growth. Various studies have followed differing for model specifications and, consequently, conclusions.

King and Levine (1993a, b, c), extending the analysis of Goldsmith (1969), carry out a cross-sectional analysis of a dataset of 80 countries over the period 1960 – 1989 in order to answer the question whether financial development can be considered a predictor of future long-run growth, not neglecting also its effect on capital accumulation and productivity growth.

In particular four measures of the level of financial development are proposed:

- DEPTH: capturing the size of financial intermediaries (liquid liabilities of financial intermediaries over GDP);
- BANK: the ratio of private bank credit over the bank credit plus central bank credit;
- PRIVATE: the ratio of the credit allocated to private enterprises over the total domestic credit;
- PRIVY: the ratio of the credit to private enterprises over GDP;

The model specification is as follows:

$$G(j) = a + b\left[F(i)\right] + gX + e \tag{1}$$

where $G(j)$ is either per capita GDP growth, or per capita capital stock growth or productivity growth; $F(i)$ is either DEPTH or BANK or PRIVATE or PRIVY and X is a set of controls (income per capita, education, political stability, indicators of exchange rate, trade, fiscal and monetary policy). These contributions conclude that the level of financial development at the beginning of the period can be considered as a good predictor of future economic growth.

More recently, much research effort has been devoted to analysing potential biases deriving from the endogeneity of financial development measures with respect to growth. Levine (1998, 1999) and Levine, Loayza, and Beck (2000) use the La Porta et al. (1998) measures of legal origin as instrumental variables. In particular, La Porta et al. (1998) show that legal origin – whether a country's Commercial/Company law derives from British, French, German, or Scandinavian law – considerably affects the letter and the enforcement of national credit laws, achieving different results in the protection of external investors and promoting financial development to different extents.

Levine, Loayza, and Beck (2000) analyses 71 countries adopting the generalized method of moments (GMM) estimator and considering a model similar to (1), where G is real per capita GDP growth over the 1960-95 period. $F(i)$, the measures of financial development, are instrumented with the legal origin indicators, Z. The variables included in X, the conditioning set, are treated as exogenous ones. Levine, Loayza, and Beck (2000) uses linear moment conditions, which amounts to the requirement that the instrumental variables (Z) be uncorrelated with the error term (e), implying that legal origin may affect per capita GDP growth only through the financial development indicators and the variables in the conditioning information set, X.

Levine, Loayza, and Beck (2000) also covers a longer time span than King and Levine (1993a,b), including the years from 1989 to 1995, it better deflates financial development indicators and it adds a new measure of overall financial development, called Private Credit. This new measure of financial development equals the value of credits by financial intermediaries to the private sector divided by GDP and it is different to PRIVY above because this includes credits issued by the monetary authority and government agencies, whereas Private Credit includes only credits issued by banks and other financial intermediaries. The measure isolates credit issued to the private sector and therefore excludes credit issued to governments, government agencies and public enterprises. Also, it excludes credits issued by central banks.

Regarding deflation of the financial development indicators, while financial intermediary balance sheet items are measured at the end of the year, GDP is measured over the year. Levine, Loayza, and Beck (2000) deflates end-of-year financial balance sheet items by end of year consumer price indices (CPI) and deflates the GDP series by the annual CPI. Then, it computes the average of the real financial balance sheet item in year t and $t-1$ and divide this average by real GDP measured in year t.

Levine, Loayza, and Beck (2000) is an important contribution not only for instrumenting financial development indicators in a cross-sectional analysis, but also for its use of dynamic panel data estimation, as in Beck, Levine and Loayza (2000). To exploit both time series and cross-section variation, it employs data averaged over five-year periods, avoiding to use data at annual frequency in order to attempt to capture long run relationships. Panel data estimation makes it possible to take care of cross-country heterogeneity and to instrument not only financial development variables but also the variables belonging to the conditioning set.

Levine, Loayza, and Beck (2000) uses the system GMM estimator

to examine the relationship between financial intermediary development and growth, while Beck, Levine and Loayza (2000) examines the relationship between financial development and the sources of growth, i.e., productivity growth, physical capital accumulation, and savings.

Regarding the frequency of the data it is worth recalling that Beck and Levine (2004) checks if the annual frequency of the data affected the results compared to the five years one. They find that the relationship between Bank Credit and growth disappears when moving to annual data. Connecting this result to Loayza and Ranciere (2002), it argues that short-run surges in Bank Credit are good predictors of banking crises and slow growth, while high levels of Bank Credit over the long-run are positively associated with economic growth. These results emphasize the significance of using sufficiently low-frequency data to move beyond cyclical effects.

It is instructive to consider more in depth the research strategy by Levine, Loayza and Beck (2000). In order to control for other factors associated with economic growth not linked to financial development, they present regression results by using three different conditioning sets:

- a simple conditioning information set, including the constant, the logarithm of initial per capita GDP and initial level of educational attainment;
- a policy conditioning information set, including the simple conditioning information set plus measures of government size, inflation, the black market exchange rate premium, and openness to international trade;
- a full conditioning information set, including the policy conditioning information set plus measures of political stability (the number of revolutions and coups and the number of assassinations per thousand inhabitants) and ethnic diversity.

Due to potential nonlinearities, the natural logarithms of the regressors are considered when taking the models to the data.

To come to the literature regarding the finance term structure, it has mainly dealt with firm level data of developing countries. On the one hand, there are those thinking that pervasive market imperfections prevent firm in developing countries to have long-term relationships with banks and, therefore, to finance wide breath projects that lead to economic growth. On the other hand, it has also been pointed out that short term credit induce banks to take better control of borrowers and projects and that public banks focusing on long term credit will have to face the

same accounting and monitoring problems as private ones. Moreover, short term credit can better reflect new information, but long term credit can protect firms from creditors' imperfect information and opportunistic behavior as well as temporary shocks (Caprio and Demirgüç-Kunt, 1997; Diamond, 1991).

The dataset here analysed offers a particular standpoint to assess the effect of finance structure on growth because Italy is known for the importance of small firms, but also for the social ties that often connect various firms and firms to banks on the ground of geographic proximity leading to the formation of industrial districts (Observatory of Eruopean SMEs, 2003a and 2003b; Becattini et al., 1992). These are two countervailing forces as small firms are usually discriminated when applying for long term credit, but at the same time the *milieu* of industrial districts may favour the formation of long term relationships between banks and firms allowing to fund long term projects by short term credit.

All the studies above conclude that financial development plays a first-order role in explaining economic growth. However, both Manning (2003) and Driffil (2003) have recently argued that they may not properly consider the role of country heterogeneity. Indeed these two contributions observe that the effect of financial development on growth disappears once inserting dummies for some subsets of countries either according to the continent they belong to or because they had an outstanding growth performance (the "Asian tigers", for instance).

The results above lead Driffil (2003) to conclude that New Economic Geography may provide a better story regarding growth and catching up, relying on agglomeration economies and transport costs. For this reason, as stated above, assessing the impact of financial development on growth at the regional level carries a particular interest.

3 Model Specification and Data Issues

I will accomplish this task considering a cross-sectional dataset of 94 Italian provinces. The model specification will be very similar to those of King and Levine (1993 a, b, c) and Levine, Loayza, and Beck (2000). More specifically I will adopt a model specification like (1), regressing the percentage growth rate of per capita value added in the Italian provinces (G) from 1986 to 2003 on a financial development indicator and a number of controls.

Controls (X) include the sum of exports and imports over value added in 1986 (EIY), the number of student enrolled in the secondary school over local resident population in 1986 (STUDENTSPOP), the value of finished public infrastructures over value added in 1986 (OPPUBVA), the number of crimes per head (CRIMESH) and the level of

provincial value added per head in 1986 (VA0POP). The value added will be deflated by using the CPI measured in the region main city[1].

Some more words need to be spent on the ratio of the sum of exports and imports over value added. Given that this paper is concerned with provinces, exports and imports only include international trade and not trade with other Italian provinces, which is of course not registered at the custom . However, more internationalised regions may achieve faster growth by exploiting at best international comparative advantages, so it appears advisable to include also this control.

As far as the indicators of financial development (F) are concerned three possibilities are available:

- the ratio of bank liabilities over value added (DEPY);
- the ratio of total short term credit over value added (IMPY);
- the ratio of long-term credit over value added (LTIMPY)[2].

Therefore, the measures of financial development here adopted are very similar to PRIVY and DEPTH used by King and Levine (1993a, b, c), with the exception of the distinction between short and long term credit. To sum up, the variables involved (with their data sources in parentheses) are:

- value added (Tagliacarne Institute);
- exports (ISTAT, the Italian national statistical office);
- imports (ISTAT);
- inflation measured in the region main city in CPI (ISTAT);
- the number of student enrolled in the secondary school (ISTAT);
- the value of finished public infrastructures (ISTAT);
- the value of bank liabilites (Bank of Italy);
- the value of short term bank credit (Bank of Italy);

[1] Using the local CPI will entail a substantial loss of observations. Using the CPI of the region main city, on the other hand, may introduce some measurement error in the dependent variable but this kind of measurement does not affect coefficient estimates and standard errors (Wooldridge, 2001). VA0POP is not affected by measurement error as 1986 is taken as base year.

[2] All the financial development indicators are measured in millions of lire over hundreds of billions of lire.

- the value of long term bank credit (Bank of Italy);
- the resident population (ISTAT).

4 Methods and Results

In this contribution I adopted the following research strategy for each one of the three indicators of financial development above. In the first place I performed OLS estimation. Then I checked for endogeneity of financial development indicators by performing the 2SLS estimator. I used as instruments geographical dummies, after performing an F-test regarding their correlation with the instrumented variables. Afterwards I tested for endogeneity of the financial indicators by means of a Hausman test. In order to check for the validity of overidentifying restrictions, I also computed the test statistic given by the product between the number of observations and the R^2 of the regression of the residuals of the 2SLS estimator on the control variables and the instruments (Wooldridge, 2001).

As the model specification does not include important regressors used in the growth literature, such as government size, in order to control for omitted variables, I grouped the data of the various provinces according to the region they are in and I used the dataset as if it was an unbalanced panel, given that each region has a different number of provinces. This step is all the more important given that cross-sectional studies of economic growth have been criticized because they cannot account, as panel studies do, for the unboservable level of technology (Islam, 1995; Caselli, Esquivel and Lefort, 1996; de la Fuente, 2002) and, while one can think that major technological differences exist between regions, it is unlikely that they are a very relevant factor within regions. Consequently, following Baltagi (2003), I computed not only the Fixed Effect estimator but also five different Random Effect estimators: the Wallace and Hussain one (WH), the Swamy and Arora one (SA), the Henderson, Fuller and Batese one (HFB) and two MINQUE estimators (MQ0 and MQA). In order to understand if the fixed effect estimator fits the data better than the random effect ones, I compared them by means of a Hausman test. Finally, after Anselin (1988), for all the estimators but 2SLS I computed the Moran's I statistic in order to check for spatial correlation in the residuals. For 2SLS I relied on Anselin and Kelejian (1997), given that instrumental variables estimators require a specific Moran's I statistic.

Tables 1, 2 and 3 contain the results respectively about the ratio of bank liabilities over value added (DEPY), the ratio of total short term credit over value added (IMPY) and the ratio of long-term credit over

value added (LTIMPY).

Three general patterns clearly emerge. Financial variables are generally positively and significantly correlated with future real growth, their endogeneity is rejected when comparing 2SLS and OLS and the fixed effect estimator appears to fit the data better than the random effect ones. It is worth noting that instruments pass the F-test for correlation with the instrumented variables at the 5% level for all the specifications and over-identifying restrictions could not be rejected. Furthermore, comparing different Random Effect estimators, it is possible to notice that significant coefficient estimates are pretty stable signalling the absence of major specification problems. Finally, once moving from OLS to the Fixed Effect estimator, differently than in Driffil (2003) and Manning (2003), the coefficients of the financial indicators remain positive and significant and their point estimates do not change much. As far as the finance structure is concerned, the coefficient of LTIMPY is nearly the double of that of IMPY, therefore long term credit appears to have a greater impact on growth even in a country where industrial districts may soften long term financial constraints for small firms.

Table 1 shows two major exceptions to the general pattern above. First, the fixed effect estimator does not find the coefficient of DEPY to be significantly different than zero. However, once omitting insignificant dummy variables, its significance is restored (see the Fixed Effect II column). Second, the MQ0 estimator strongly accept the null of the Hausman test. However, given that the tests for all the other estimators point to the fixed effect estimator as the most suitable one, their result appears to be more reliable. At any rate, coefficient estimates do not change much across different estimators.

These results regarding the size of the banking sector can shed new light on the impact of the functions of the financial sector on economic growth. Levine (2004) points out that the functions of financial systems are to:

- "produce information ex ante about possible investments and allocate capital;
- monitor investments and exert corporate governance after providing finance;
- facilitate the trading, diversification and management of risk;
- mobilize and pool savings;
- ease the exchange of goods and services".

The evidence produced in this contribution cannot offer a test for the hypotheses whether either the production of information regarding investment opportunities or the monitoring role of banks or their risk management function can have an impact on economic growth. However, the size of the banking sector relative to the size of the economy is definitely an indicator of its ability to allocate capital, to mobilize and pool savings and to ease the exchange of goods and services, so it is possible to conclude that the more the financial system is able to provide these functions and the more the economy will benefit from it in terms of enhanced growth.

5 Conclusions

In this contribution I tested on a regional dataset the hypothesis that the level of financial development, meant as size of the banking sector, can be considered as a good predictor for future growth. This step was desirable because:

- it can help to understand if the finance growth nexus holds even at the regional level, where its main theoretical competitor (the New Economic Geography approach) finds its most natural context;
- it allows to avoid pooling developed and developing countries, that have widely different experiences;
- it allows to check if the finance-growth nexus hold even in highly integrated financial markets, as those of a 146 years old monetary union;
- it allows to test if long term credit has a greater impact on growth than the short term one.

The results reached in this application point to the fact that the size of the banking sector can be safely considered a good predictor for future growth, especially when focusing on long term projects. Tests for its endogeneity were rejected and the omission of relevant variables (unobserved spatial heterogeneity) does not have major effects on its estimated coefficient.

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Table 1 – The effect of financial development on real economic growth (DEPY) – Dependent variable: growth rate of per head value added

	OLS	2SLS	Fixed Effects I	Fixed Effects II	WH	SA	HFB	MQ0	MQA
DEPY	4.56*	7.55*	2.57	4.06*	3.82*	3.82*	3.65*	4.12*	3.72*
t-stat.	(3.15)	(3.19)	(1.56)	(3.02)	(2.61)	(2.76)	(2.56)	(2.79)	(2.53)
EIY	-1.72	-1.49	0.66	-0.01	-1.29	-1.29	-1.07	-1.55	-1.17
t-stat.	(-0.92)	(0.44)	(0.36)	(-0.01)	(-0.72)	(-0.76)	(-0.62)	(-0.84)	(-0.66)
STUDENTSPOP	3.15	3.72	-1.78	-0.13	1.80	1.81	1.28	2.53	1.52
t-stat.	(1.20)	(1.37)	(-0.56)	(0.05)	(0.65)	(0.70)	(0.47)	(0.92)	(0.54)
PUBVA	0.21*	0.26	0.03	0.07	0.16	0.16	0.15	0.19	0.15
t-stat.	(2.12)	(1.37)	(0.23)	(0.85)	(1.66)	(1.76)	(1.53)	(1.87)	(1.55)
VA0POP	-21.54*	-26.61*	-51.69*	-42.25*	-25.27*	-25.25*	-27.21*	-23.00*	-26.29*
t-stat.	(-4.11)	(-4.28)	(-4.30)	(-6.79)	(-4.05)	(-4.27)	(-4.23)	(-3.94)	(-4.05)
CRIMESH	-1.05	-1.61	2.93*	1.80	0.18	0.18	0.58	-0.41	0.40
t-stat.	(-0.94)	(-1.34)	(2.15)	(1.17)	(0.16)	(0.16)	(0.50)	(-0.36)	(0.34)
CONSTANT	28.61*	18.41	-	-	41.66*	41.59*	46.92*	34.65*	44.49*
t-stat.	(1.78)	(1.05)	-	-	(2.33)	(2.46)	(2.62)	(2.00)	(2.43)
R^2	0.31	0.28	0.61	0.53	-	-	-	-	-
MORAN'S I	-0.41	-0.16	-0.58	-	0.54	0.54	0.66	0.38	0.61
HAUSMAN	-	0.86	-	-	0.00	0.01	0.03	1.00	0.00
IV F-test (p)	-	0.00	-	-	-	-	-	-	-
IV nR^2 (p)	-	0.22	-	-	-	-	-	-	-
Observations	94	94	94	94	94	94	94	94	94

*: significant at the 5% level

Table 2 – The effect of financial development on real economic growth (IMPY) – Dependent variable: growth rate of per head value added

	OLS	2SLS	Fixed Effects	WH	SA	HFB	MQ0	MQA
IMPY	6.52*	10.85*	4.78*	5.82*	5.81*	5.53*	6.05*	5.67*
t-stat.	(3.88)	(3.30)	(2.86)	(3.54)	(3.81)	(3.55)	(3.60)	(3.46)
EIY	-2.01	-1.96	0.55	-1.66	-1.65	-1.36	-1.83	-1.51
t-stat.	(-1.10)	(-1.04)	(0.31)	(-0.95)	(-1.02)	(-0.82)	(-1.02)	(-0.87)
STUDENTSPOP	0.76	-0.25	-3.09	-0.09	-0.12	-0.70	0.28	-0.40
t-stat.	(0.29)	(-0.09)	(-1.04)	(-0.03)	(-0.05)	(-0.27)	(0.11)	(-0.15)
PUBVA	0.26*	0.33*	0.05	0.21*	0.21*	0.18*	0.23*	0.20*
t-stat.	(2.57)	(2.89)	(0.42)	(2.13)	(2.29)	(1.95)	(2.28)	(2.00)
VA0POP	-22.71*	-28.62*	-57.36*	-26.22*	-26.36*	-29.14*	-24.60*	-27.63*
t-stat.	(-4.48)	(-4.41)	(-4.93)	(-4.37)	(-4.72)	(-4.63)	(-4.30)	(-4.40)
CRIMESH	-1.12	-1.72	2.68*	-0.01	0.02	0.54	-0.40	0.28
t-stat.	(-1.03)	(-1.44)	(2.14)	(-0.01)	(0.03)	(0.50)	(-0.35)	(0.25)
CONSTANT	47.21*	49.21*	-	56.06*	56.39*	63.79*	52.11*	59.37*
t-stat.	(3.17)	(3.17)	-	(3.42)	(3.70)	(3.84)	(3.24)	(3.54)
R^2	0.35	0.30	0.64	-	-	-	-	-
MORAN'S I	-0.25	-0.31	-0.49	0.48	0.49	0.67	0.38	0.58
HAUSMAN	-	0.88	-	0.00	0.00	0.01	0.00	0.00
IV F-test (p)	-	0.02	-	-	-	-	-	-
IV nR^2 (p)	-	0.13	-	-	-	-	-	-
Observations	94	94	94	94	94	94	94	94

*: significant at the 5% level

Table 3 – The effect of financial development on real economic growth (LTIMPY) – Dependent variable: growth rate of per head value added

	OLS	2SLS	Fixed Effect	WH	SA	HFB	MQ0	MQA
LTIMPY	11.23*	18.73*	7.60*	10.41*	10.34*	9.78*	10.43*	10.09*
t-stat.	(4.09)	(3.00)	(2.74)	(3.86)	(4.14)	(3.81)	(3.86)	(3.79)
EIY	-1.93	-1.84	0.37	-1.67	-1.65	-1.39	-1.68	-1.53
t-stat.	(-1.07)	(-0.97)	(0.20)	(-0.95)	(-1.01)	(-0.84)	(-0.96)	(-0.89)
STUDENTSPOP	0.33	-0.96	-3.39	-0.46	-0.53	-1.09	-0.45	-0.78
t-stat.	(0.13)	(-0.34)	(-1.14)	(-0.17)	(-0.21)	(-0.42)	(-0.17)	(-0.29)
PUBVA	0.16	0.16	0.05	0.15	0.16	0.13	0.15	0.14
t-stat.	(1.62)	(1.58)	(0.43)	(1.54)	(1.65)	(1.47)	(1.55)	(1.49)
VA0POP	-13.45*	-13.23	-51.72*	-18.12*	-18.50*	-21.99*	-18.01*	-20.01*
t-stat.	(-3.01)	(-2.84)	(-4.46)	(-3.27)	(-3.55)	(-3.67)	(-3.26)	(-3.42)
CRIMESH	-2.41*	-3.87	1.94	-1.33	-1.25	-0.63	-1.35	-0.97
t-stat.	(-2.03)	(-2.36)	(1.41)	(-1.09)	(-1.11)	(-0.53)	(-1.11)	(-0.79)
CONSTANT	43.02*	42.23	-	51.46*	52.20*	58.89*	51.26*	55.10*
t-stat.	(2.92)	(2.74)	-	(3.18)	(3.46)	(3.62)	(3.17)	(3.34)
R^2	0.36	0.30	0.64	-	-	-	-	-
MORAN'S I	-0.04	0.49	-0.39	0.60	0.62	0.80	0.60	0.70
HAUSMAN	-	0.93	-	0.00	0.00	0.01	0.00	0.00
IV F-test (p)	-	0.02	-	-	-	-	-	-
IV nR^2 (p)	-	0.68	-	-	-	-	-	-
Observations	94	94	94	94	94	94	94	94

*: significant at the 5% level