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政治民主化與經濟發展--臺灣的實証研究

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政治民主化與經濟發展--台灣的實証研究 Political Democracy and Economic Growth—An Empirical Study of Taiwan

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一、中英文摘要

本研究主要的研究目的在於探究經濟成長與民主化之間的因果關係。利用台灣過去 30 年的時間序列官方資料，以及 Freedom House 所出版的民主化指標，作為研究的資料。為了研究兩者的雙向因果關係，本研究利用的研究方法為 Toda and Yamamoto (1995) 所提出的 Granger no-causality 檢定。實証結果顯示，台灣的民主化程度提高時，將延緩經濟的成長；但是，相反的，當經濟成長增加時，卻有助於台灣民主化程度的提升。

關鍵詞：Granger causality、民主、經濟成長、政治自由

JEL 分類號：I28; J24; J68

Abstract

This paper studies the Granger Causality relation between political democracy and economic growth in Taiwan. The data now available on Taiwan, approximately for 30 years, provides the information necessary to isolate the causal relationship between economic growth and democracy in Taiwan. The primary finding of this study is that with respect to the government policies, improvements in political democracy retard economic growth,

but higher economic growth tends to increase democracy level in Taiwan.

Keywords: Democracy; Economic growth; Granger causality; Political freedom

JEL Classifications: P16; O10.

二、緣由與目的

Is democracy associated with greater economic growth? Do increased political rights lead to improved standards of living, compared to more authoritarian regimes? The literature on growth theories have debated on the important role played by the government. Reviewing the economic growth of developing countries, Kuznets (1973) indicated that both the political environment and the type of government have a significant effect on economic growth. Even though technological advancement is a necessary condition for economic growth, Kuznets emphasized that the sufficient condition is that technological advancement is in a stable and liberty respecting political environment. Democratic governments inspire trade and labor unions to demand unduly high wages, which leads to strikes and lockouts and the ensuing loss of output. However, to try to carry out democracy will improve the rights of the people.

Earlier researches conferred the relationship with democracy and economic

growth by correlation analysis, and a part of the researches concluded that the political rights exhibit positive correlation with economic growth. Recently researches, in opposition to earlier researches, have argued about the causality relationship between the political right and economic growth. Some economists and political thinkers have maintained that the “democracy first” argument is not valid for LDCs, as it is generally taken to be applicable to the Western countries.

The miracle of Taiwan’s economic growth within the past three decades is debated. It is very surprising that Taiwan’s economic growth rate turned into a negative number in 2001, the second year of President Chen, Shui-Bian took over the presidency of Taiwan in 2000. This alternation of power is an important milestone of Taiwan’s democratic development. The primary purpose of this study is thus to investigate the causality relation between the political right and the economic growth of Taiwan, one of the “four dragons” in Southeast Asia.

The remainder of this study is organized as follows. In section 2, the comprehensive literature relating the political freedom with economic growth is discussed. The transitioning democracies of Taiwan will be introduced in section 3. Section 4 discusses the methodology and the data employed in this paper. Section 5 reports the estimated results. Section 6 presents and discusses the conclusions drawn from this study.

三、文獻回顧

Since the development-democracy hypothesis developed by Lipset (1959) and Cutright (1963), the relationship between political democracy and economic development has received much attention from social scientists. Alesina and Perotti (1994) reviewed the recent literature on the political economy of growth and indicated that two of the most active fields in economics in the past few years have been growth theory and political economics.

Lipset (1959), Cutright (1963), Bollen (1983), Huntington (1984), Pourgerami (1988), Persson and Tabellini (1994), and Gounder (1999) concluded that there is a positive correlation between economic development and political democracy. Correspondingly, an economically developed country has a greater chance to accomplish and sustain democracy.

On the contrary, a number of empirical studies, for example, Marsh (1979), Clarke (1995), Barro (1997), Nelson and Singh (1998), and Barro (1999) refuted the democracy-growth hypothesis. The cost of more political freedom is necessarily a retardation of development and that rapid growth will result in a loss of freedom. Marsh (1979), Nelson and Singh (1998), and Barro (1999) determined that the less democratic the countries were more rapid the growth. Almeida and Ferreira (1999) also questioned that why the richer countries are more democratic than the poorer ones.

A small number of researches try to link political democracy and economic development by establishing a theoretical model. Roemer (1995), Myerson (1995), Rivera-Batiz (1999), and Almeida and Ferreira (1999) established some theoretical models to connect economic development and political democracy. Almeida and Ferreira (1999) provided a model in which a risk-averse representative agent chooses a political regime that maximizes her expected utility. They also provided some econometric evidence and established by numerical simulation that democracies have less economic growth rates than dictatorships. Barro (1996) concluded that the linkages that he established between economic growth and democracy are a result of the connections between democracy and other determinants of growth, such as human capital.

In most previous studies, spanning over three decades, empirical evidences establish only correlations and not causal relations. Lipset (1959), Pourgerami (1988), Nelson and Singh (1998), and Almeida and Ferreira

(1999), for example, evaluated the relationship between political democracy and economic growth by correlation analysis or through the significance test of the parameters estimated by OLS. Minier (2001) adopted Logit analysis of a set of panel data to provide the conclusion that democracy is a normal good. That is to say, higher incomes lead citizens to desire for more democracy. He also indicated that as incomes increase, people demand democracy more strongly.

However, the causal relationship between economic development and democracy is the focus of the recent studies. Pourgerami (1988) investigated the development-democracy-growth hypothesis, estimated positive correlations and causal associations between development and democracy and democracy and growth utilizing a multiple regression analysis with time series data but not a causality analysis. Barro (1999) confirmed the Lipset/Aristotle hypothesis, which says that a higher standard of living promotes democracy, by studying the data for a large group of countries. Barro also confirmed the nonlinear relationship between political democracy and development. Gounder (1999) demonstrated that the democracy variable to be positive and statistically significant for growth by utilizing the Autoregressive Distributed Lag (ARDL) method of cointegration, which applied a Solow-type neoclassical growth model with Fiji's annual data from 1968 to 1996. Not considering the stationarity of the time series data, Gounder (1999) concluded from the empirical results that the democratic environment leads to higher economic growth

四、研究結果與討論

The data set used in our empirical model encloses annual data in real terms (at 1996 prices) over the period from 1973 to 2002. According to the discussion in the introductory part, the hypothesis of causality

between the democracy and economic development is tested on the basis of a two-variable vector-autoregressive (VAR, hereafter) model involving political democracy index and real GDP growth rate

(1) 計量模型：

Causality, in the sense defined by Granger (1969) and Sims (1972) is inferred when lagged values of a variable have explanatory power in a regression of another variable on lagged values of the variables. The process developed by Toda and Yamamoto (1995), expanded by Rambaldi and Doran (1996) and Zapata and Rambaldi (1997), is applied to test the Granger non-causality even if the processes may be integrated or cointegrated by an arbitrary order. This testing procedure for Granger non-causality has become more common in the econometrics literature in the recent years (Asai and Shiba, 1995; Shan and Sun, 1998a; Shan and Sun, 1998b; Yamada, 1998; Shan *et al.*, 1999; Hatemi and Irandous, 2000; Shan and Wilson, 2001).

To facilitate our investigation, the following n-variables, $\mathbf{X}_t = [x_{1,t} \ \cdots \ x_{n,t}]'$, VAR system is built in a SUR form

$$\mathbf{X}_t = \mathbf{A}_0 + \mathbf{A}_1 \mathbf{X}_{t-1} + \cdots + \mathbf{A}_k \mathbf{X}_{t-k} + \mathbf{A}_{k+1} \mathbf{X}_{t-k+1} + \cdots + \mathbf{A}_p \mathbf{X}_{t-p} + \mathbf{e}_t, \quad (1)$$

where

$$\mathbf{A}_0 = \begin{bmatrix} a_{1,0} \\ \vdots \\ a_{n,0} \end{bmatrix}, \quad \mathbf{A}_i = \begin{bmatrix} a_{1,1}^{(i)} & \cdots & a_{1,n}^{(i)} \\ \vdots & \ddots & \vdots \\ a_{n,1}^{(i)} & \cdots & a_{n,n}^{(i)} \end{bmatrix}, \quad i=1, \dots, p,$$

$$\mathbf{e}_t = \begin{bmatrix} e_{1,t} \\ \vdots \\ e_{n,t} \end{bmatrix},$$

in which \mathbf{A}_0 is a n-by-1 vector of constants, \mathbf{A}_i are n-by-n matrices of coefficients, $p = k + d_{max}$, and \mathbf{e}_t is an *i.i.d.* sequence of n-dimensional random vectors with mean zero and covariance matrix Σ . More simply, Equation (1) can also be rewritten as

equation (2)

$$\mathbf{X}_t = \mathbf{A}_0 + \sum_{i=1}^p \mathbf{A}_i \mathbf{X}_{t-i} + \mathbf{e}_t \quad (2)$$

If m -exogenous variables, $\mathbf{Z}_t = [z_{1,t} \ \cdots \ z_{m,t}]'$, are to be included in the model, equation (2) is extended as follows.

$$\mathbf{X}_t = \mathbf{A}_0 + \sum_{i=1}^p \mathbf{A}_i \mathbf{X}_{t-i} + \mathbf{BZ}_t + \mathbf{e}_t, \quad (3)$$

\mathbf{B} is a m -by- m matrix of coefficients.

$$\mathbf{B} = \begin{bmatrix} b_{1,1} & \cdots & b_{1,m} \\ \vdots & \ddots & \vdots \\ b_{m,1} & \cdots & b_{m,m} \end{bmatrix},$$

To test the hypothesis of Granger non-causality that is formulated as restrictions

$$H_0: a_{i,j}^{(1)} = \cdots = a_{i,j}^{(k)} = 0, \quad i \neq j.$$

As mentioned earlier, in order to examine the causality between the democracy level and economic growth rate, the empirical model thus is a two-variable VAR system which includes the political freedom index,¹ PFI , and real per capita GDP growth rate, G . In the empirical model, this paper also employs two exogenous variables, education level and Gini coefficient, to improve the explanation of the model. EDU denotes the education level, which is a ratio of the civil with a college or higher education level. And $GINI$ denotes Taiwanese Gini Coefficient.²

¹ The political freedom index, which consists of a ranking of democracy levels on a seven-point scale since 1972, is available on-line from the Freedom House, <http://www.freedomhouse.org/>. The less the democracy index, the more free the political environment is. In order to make sense, we adjust the political freedom index to be $(8 - \text{political freedom index})$, thus $PFI = (8 - \text{political freedom index})$. So that, if the coefficient of PFI is positive, then we can conclude that the Political freedom index is positively correlated with economic growth.

² The Gini Coefficient is obtained from the Department of Statistics, Ministry of Economic Affairs, Taiwan.

Furthermore, \mathbf{X}_t and \mathbf{Z}_t are as shown as follows,

$$\mathbf{X}_t = \begin{bmatrix} PFI_t \\ G_t \end{bmatrix}, \quad \mathbf{Z}_t = \begin{bmatrix} EDU_t \\ GINI_t \\ D_{1,t} \\ D_{2,t} \end{bmatrix},$$

where D_1 and D_2 denote the dummy variable of Asian financial crisis and revocation of martial law, respectively. As we know, Asian financial crisis came about in July 1998, thus $D_1 = 1$ in 1998, and 0 for the others. The revocation of martial law in Taiwan led to democracy since 1987. D_2 is set to be equal to 0 before 1987, and 1 after 1988. The dummy variable, D_1 and D_2 are included in the system to eliminate the effect of Asian financial crisis and revocation of martial law. Equation (3) is expressed in more detail by equation (4) and (5)

$$PFI_t = a_{1,0} + \sum_{i=1}^p a_{1,i}^{(1)} PFI_{t-i} + \sum_{i=1}^p a_{1,i}^{(2)} G_{t-i} + b_{1,1} EDU_t + b_{1,2} GINI_t + b_{1,3} D_1 + b_{1,4} D_2 + \varepsilon_{1t}, \quad (4)$$

$$G_t = a_{2,0} + \sum_{i=1}^p a_{2,i}^{(1)} PFI_{t-i} + \sum_{i=1}^p a_{2,i}^{(2)} G_{t-i} + b_{2,1} EDU_t + b_{2,2} GINI_t + b_{2,3} D_1 + b_{2,4} D_2 + \varepsilon_{2t}, \quad (5)$$

in which, $p = k + d_{max}$.

(2) 估計結果分析：

It is found that the null hypothesis of economic growth rate does not Granger Cause political freedom is rejected by 5% significance level, and the sum of lagged coefficients is 0.21. That means that higher GDP growth rate will Granger cause higher political freedom. In a sense, ultimately, economic growth will lead to political democracy. The reason is, once basic needs are met, citizens will shift their attention to political rights. It has been further implied that with economic growth will appear understanding, awareness, political freedom, civil liberties, and finally, democracy. This result is similar to the concept developed by Nelson and Singh (1998) and Minier (2001). Roemer (1995) also indicated that only highly developed economies enjoyed

political democracy.

Moreover, the sum of the lagged coefficients in equation (5) is negative. This means that more democracy will curtail economic growth. Although sum of the lagged coefficients is not significant at 5% significance level, the null hypothesis of political freedom does not Granger cause GDP growth rate is rejected at 10% significance level. The negative coefficient indicates that a higher index of political freedom Granger causes a lower GDP growth rate. One way to interpret the results is that, in the worst dictatorships, an increase in political rights tends to impair growth and investment because the dominant effect comes from the intensified concern with income redistribution. Thus, growth would likely be reduced by further democratization. This result is similar to Barro (1997), but opposite to the findings of Gounder (1999).

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(3) 研究結果與討論

In this current work we have used data for Taiwan approximately for a period of 30 years, and it provides the information necessary to more exhaustively study the relationship between economic growth and

democracy in Taiwan. We find through our analysis in Taiwanese experience, with respect to government policies, increases in political rights retards economic growth but higher economic growth tends to increase level of democracy. As the economy grows the aspirations of the people grow and that forces the government to open up, that is to democratize. This conclusion is in line with the common thinking. However the negative causal relationship between democracy and growth needs to be explained. This seemingly strange relationship could be explained if we take into account the costs and delays involved in the democratic decision making process. Delayed decision making is inherent to democratic decision making process and it has a significant detrimental effect on economic growth.

We could put forward other arguments for the observed causal relationship. First, arguments that relate regimes to growth focus on property rights, pressures for immediate consumption, and the autonomy of dictators. While everyone seems to agree that secure property rights foster growth, it is controversial whether democracies or dictatorships better secure these rights. The main mechanism by which democracy is thought to hinder growth is through pressures for immediate consumption, which reduce investment. Only states that are institutionally insulated from such pressures can resist them, and democratic states are not. Second, economic development increases the levels of education in society. More highly educated people tend to develop the characteristics of trust, satisfaction, and competence that go with democracy.

However, uniqueness is also an obstacle to generalization. As pointed out by Lin (1999), to what extent can the Taiwan experience be imitated? For example, is the People's Republic of China (PRC) likely to follow the same path if similar conditions are fulfilled? If such a chance exists elsewhere, why have other authoritarian regimes allowed themselves to collapse? What theoretical contribution can the Taiwan case

render other than its peculiarity? All these questions can be left for further research in the future.

五、計畫成果自評

This study has conducted an interesting and special topic regarding the causal relationship between democracy and economic growth in the case of Taiwan. The conclusion is robust and consistent with our expectation. An improvement in political democracy retards economic growth, but higher economic growth tends to increase democracy level in Taiwan. Although many previous studies have pay attention to this issue, however, most of them conducted an one-way relation investigation, and few have explored a two-way relationship between democracy and economic growth. Thus this study could be a supplement to the existing literature with respect to this subject which is the primary contribution of this study. The draft will be presented in some conferences and submitted to an international journal after minor modification.

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