
By

Sam Hak Kan TANG a

and

Linda Chor Wing YUNG b

ABSTRACT
We examine the direction of causality between growth and democratization for the high performing Asian economies using a new time-series technique called autoregressive distributive lag. We find that for all eight of such economies, the direction of causality runs consistently from democratization to growth and not the other way around. Rapid growth in the high performing economies appears to have little effect on democratization. We also find that the net effect of democratization on growth is not always positive. Against the widely-held view that growth enhances democratization, our evidence suggests that rapidly developing countries under authoritarian rule are unlikely to improve their democratic institutions.

Keywords: Growth, Democratization, High Performing Asian Economies.

JEL classification: O10, P16, O57

a. Corresponding author. Economics Program, the University of Western Australia, 35 Stirling Highway, Crawley WA 6009, Australia. Tel: +618-6488-2931. Fax: +618-6488-1016. E-mail: sam.tang@uwa.edu.au

b. Department of Economics, the Chinese University of Hong Kong, Shatin, NT, Hong Kong. We gratefully acknowledge the Chinese University of Hong Kong for financial support through Direct Grant 2020784.
Introduction

When the Chinese Premier, Wen Jiabao, attended the ASEAN meeting in Laos in November 2004, he was quizzed by the media about the issue of democracy and human rights in China. He commented that China has achieved a rapid rate of growth for the past twenty-five years and inevitably it would become more democratic with increasing economic prosperity. His comment echoes a norm among political leaders in high performing Asian economies (HPAEs), who argue that economic prosperity is a far more important goal than democracy, and that democracy will eventually flow from sustained economic prosperity. Their argument raises two immediate questions: whether rising income levels can accelerate the pace of democratization, and whether democratization necessarily harms growth. This paper will attempt to shed some light on the first question, which is about the determinants of democracy, and will provide clues to answering the second.

The question of whether rising income levels accelerate democracy has received little attention in the empirical literature. Some empirical studies find a strong correlation between growth and democracy (see, for example, Barro, 1996, 1999; Huntington, 1991; and Lipset, 1959). Other studies distinguish between outcome-based and demand-based measures of democracy. Minier (2001), who uses democratic movements to measure the demand for democracy, finds that such demand does not increase monotonically with the level of income, but decreases after a country reaches a certain income threshold. Recently, however, Rigobon and Rodrik (2004) find that the effect of rising incomes on democratic institutions, an outcome-based measure, is positive, but statistically insignificant.

Given the inconclusive literature, the goal of this paper is to re-examine the empirical relationship between growth and democracy using data from HPAEs. Specifically, it empirically tests whether there is a significant long-run causal relationship between growth and democracy using a relatively new time-series approach called the autoregressive distributive lag (ARDL) bounds test.1 The results of this test will shed light on whether rising income levels have a significant positive effect on democracy, and whether democratization necessarily harms growth.

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1 This test was developed by Pesaran, Shin and Smith (2001).
This paper contributes to the literature by offering empirical results that are based on individual country studies of HPAEs. First, we can check the compatibility of our country-specific results with generalizations of cross-country or panel data analyses. Second, a key contribution of this paper is its adoption of the time-series approach rather than the more common cross-section or panel data approaches.⁡ Employing the time-series approach allows the researcher to explore how changes in one variable over time affect another variable, and thus to address the issue of long-run causality between variables. In particular, use of the relative new ARDL bounds test technique eliminates the required assumption of stationarity for the underlying series in conventional cointegration studies.³

Our results consistently show a significant long-run causal relationship running from democracy to growth for all HPAE. However, we fail to find that growth has a significant effect on democracy for these fastest growing economies of the world. Thus, our results do not support the widely-held view that rising income levels accelerate democratization. We argue that both authoritative governments and the unwillingness of policymakers to yield to increasing popular demand for democracy in HPAEs account for the absence of a significant linkage between growth and democratization. In addition, consistent with the results of previous empirical studies, we find that the net effect of democratization on growth can be negative, which may result from a more egalitarian redistribution system.

The remainder of this paper is organized into five sections. In the second section, we discuss theoretical arguments for the links between growth and democracy. The third and fourth sections discuss the data and the ARDL bounds test technique respectively. The fifth section presents the empirical results, followed by a discussion of the results in the sixth section. The seventh section summarizes and concludes the paper.

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² Until recently, time-series analysis was relatively rare in this area. In part, this can be attributed to the unavailability of quality data on democracy, and also to the fact that democratic institutions are considered essentially invariant over time. However, the passage of time has mitigated both of these limitations.

³ As expected, the GDP growth rate is stationary or $I(0)$. However, it is difficult to ascertain the stationarity of the democracy series.
2. Background

In the empirical literature on democracy, the two main foci are either the effects of democracy on growth or the determinants of democracy. This paper concerns both of these areas by attempting to establish the direction of causal relationship between growth and democracy. As there theoretical arguments support both directions of causation, the issue requires empirical examination.

In the theoretical literature, political stability, the quality of governance, government size, human capital, income equality, trade openness, and physical capital accumulation are believed to be the main channels through which democracy affects growth. The net effect of democracy on growth ultimately depends on the relative strength of each of these factors. Lee (2003) models income redistribution, democracy, and growth, and reports that a democratic regime grows more rapidly than an oligarchic regime if the redistribution scheme is elitist or the income distribution is less skewed. If the society is paternalistic or income distribution is highly skewed, then a democratic regime performs worse than an oligarchic regime.

Rodrik (2000) emphasizes the importance of “local knowledge” that allows the market to perform adequately. He argues that participatory political systems are the most effective for processing and aggregating local knowledge. According to him, democracy is a meta-institution for building good institutions, and there is strong evidence to indicate that participatory democracies enable higher quality growth.

Empirically, Tavares and Wacziarg (2001) find that democracy fosters growth by improving the accumulation of human capital and by lowering income inequality, but hinders growth by reducing the rate of physical accumulation and by raising the ratio of government consumption to GDP. They find that the net effect of democracy on growth is moderately negative. Borner et al. (1995) report that out of sixteen empirical studies, three show a positive relationship between democracy and growth, three show a negative relationship, and the remaining ten are inconclusive. Helliwell (1994) and Barro (1996) find a non-significant negative effect of democracy on growth once several growth-determining variables are held constant.

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4 See Tavares and Wacziarg (2001) for a detailed discussion of these channels.
On the effects of growth on democracy, Lipset (1959, 1960) and Huntington (1991) are the two most frequently cited sources who have argued that rising income levels cause better democratic institutions and not the other way around. Lipset points out that education plays an important role in facilitating the desire for democracy as income rises. He argues that “the higher one’s education, the more likely one is to believe in democratic values and support democratic practices” (1959, p. 79). Lipset’s contention is that rising income gives rise to improvement in human capital, which in turn serves as a catalyst for democratic institutions. Huntington (1991) also broadly defines economic development as including an increasing volume of international trade and the development of sizeable middle class, all of which facilitate the desire for increasing participation in the political process. He argues that economic integration exposes societies to democratic ideas that prevail in other parts of the world.

Empirical studies such as those of Alvarez et al. (2000), Barro (1999), Glaeser et al. (2004) and Minier (2001) support the view that growth comes before improvement in democratic or political institutions. For example, Minier (2001) finds that the demand for democracy increases with the level of income up to a certain income threshold, after which it decreases. Glaeser et al. (2004) find evidence to support Lipset’s contention that democracy is not necessary for growth. They conclude that “countries that emerge from poverty accumulate human and physical capital under dictatorships, and then, once they become richer, are increasingly likely to improve their institutions.” (2004, p. 298). Clearly, they argue for a unidirectional causality running from growth to democratic institutions.

3. Data
The spectacular pace of economic growth that has been achieved by HPAEs in recent decades provides a natural environment in which to test the relationship between growth and democracy. We choose eight Asian economies that have experienced a rapid rate of growth in the past three decades: Hong Kong, Indonesia, Malaysia, the Philippines, South Korea, Singapore, Taiwan, and Thailand. In Table 1, we show the real per annum growth rates for these economies. Clearly, the Philippines is an underperformer since it has an average real growth rate of 3.6 percent over the 1970-1996 period, which is relatively low.
compared to those of the four Asian tigers (Hong Kong, South Korea, Singapore, and Taiwan) and the newly industrializing economies (Indonesia, Malaysia, and Thailand). We nevertheless include it in our study because it has experienced substantial changes in democratic institutions in the last two decades. Moreover, China is another economy that deserves special attention and should be a prime candidate for study, but, unfortunately, its quarterly GDP data are highly unreliable. We thus have no choice but to exclude China from our sample.

Table 1: Average Real Per Annum Growth Rates

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Hong Kong</td>
<td>7.4</td>
<td>5.0</td>
<td>-5.1</td>
<td>2.9</td>
<td>10.5</td>
<td>3.2</td>
</tr>
<tr>
<td>Indonesia</td>
<td>7.3</td>
<td>4.7</td>
<td>-13.0</td>
<td>0.3</td>
<td>4.8</td>
<td>4.1</td>
</tr>
<tr>
<td>Malaysia</td>
<td>7.5</td>
<td>7.3</td>
<td>-7.4</td>
<td>5.8</td>
<td>8.3</td>
<td>5.3</td>
</tr>
<tr>
<td>Philippines</td>
<td>3.6</td>
<td>5.2</td>
<td>-0.8</td>
<td>3.2</td>
<td>4.0</td>
<td>4.7</td>
</tr>
<tr>
<td>South Korea</td>
<td>8.1</td>
<td>5.0</td>
<td>-6.7</td>
<td>10.7</td>
<td>8.8</td>
<td>3.1</td>
</tr>
<tr>
<td>Singapore</td>
<td>8.6</td>
<td>8.2</td>
<td>0.4</td>
<td>5.4</td>
<td>9.9</td>
<td>1.1</td>
</tr>
<tr>
<td>Taiwan</td>
<td>8.5</td>
<td>6.7</td>
<td>4.6</td>
<td>5.4</td>
<td>5.9</td>
<td>3.2</td>
</tr>
<tr>
<td>Thailand</td>
<td>7.7</td>
<td>-1.7</td>
<td>-10.2</td>
<td>4.2</td>
<td>4.3</td>
<td>6.7</td>
</tr>
</tbody>
</table>

Sources: Data are from World Bank tables, GDP in constant prices, with the following exceptions. (a) Data for 2003 are from Data Stream (b) Data for Taiwan are from the National Statistics Database at http://www.stat.gov.tw/main.htm. (c) Data for Indonesia were taken from http://www.bi.go.id/bank_indonesia_english/main/statistics/. (d) Data taken from the World Bank website http://www.worldbank.org/data/countrydata/countrydata.html.

Democracy is measured by an index called “democratic accountability” that is prepared by the International Country Risk Guide (ICRG). Democratic accountability measures “how responsive [a] government is to its people, on the basis that the less responsive it is, the more likely it is that the government will fall, peacefully in a democratic society, but possible violently in a non-democratic one.” The highest score of 5 indicates “free and fair elections for the legislature and executive as determined by constitution, viable opposition and independent judiciary.” The lowest score of 0 indicates autarchy, as defined by “leadership of the state by a group or single person, without being subject to any franchise, either through military might or inherited right.”

We adopt the measure of democracy from the ICRG for three reasons. First, it has been used extensively in the literature. Second, the ICRG has distinct categories of

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‘political risk’ (such as corruption, rule of law, government stability, democratic accountability and bureaucratic quality), which allows researchers to be reasonably specific in what they are measuring. Third, it has broad coverage across countries. However, it also has limitations. First, it is only available for a relatively short time span from 1984. Second, it is prepared by analysts of the respective countries and designed mainly for international investors. Thus, it is possible that such a risk rating may be distorted in reflecting only the concerns of international investors and not of the country as a whole.

Table 2: Summary Statistics for Democratic Accountability and GDP Growth

<table>
<thead>
<tr>
<th></th>
<th>Sample period</th>
<th>Democratic accountability</th>
<th>GDP growth (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Average</td>
<td>Std. deviation</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>1984Q2-2003Q4</td>
<td>2.29</td>
<td>0.89</td>
</tr>
<tr>
<td>Indonesia</td>
<td>1994Q2-2003Q4</td>
<td>3.14</td>
<td>1.13</td>
</tr>
<tr>
<td>Malaysia</td>
<td>1992Q2-2003Q4</td>
<td>3.16</td>
<td>1.01</td>
</tr>
<tr>
<td>Philippines</td>
<td>1984Q2-2003Q4</td>
<td>4.52</td>
<td>0.92</td>
</tr>
<tr>
<td>S. Korea</td>
<td>1984Q2-2003Q4</td>
<td>4.06</td>
<td>1.77</td>
</tr>
<tr>
<td>Singapore</td>
<td>1984Q2-2003Q4</td>
<td>2.79</td>
<td>0.49</td>
</tr>
<tr>
<td>Taiwan</td>
<td>1984Q2-2003Q4</td>
<td>4.27</td>
<td>1.06</td>
</tr>
<tr>
<td>Thailand</td>
<td>1994Q2-2003Q4</td>
<td>4.06</td>
<td>0.61</td>
</tr>
</tbody>
</table>

Note: Democratic accountability (DA) is measured by an index. It has a scale from 0 to 5, with higher scores indicating the greater responsiveness of a government to its people. A score of 0 indicates autarchy and a score of 5 indicates free and fair elections. DA data are available on a monthly basis from the International Country Risk Guide. We average the monthly DA series to get quarterly DA series. GDP growth refers to the year-on-year quarterly growth rate of real GDP. Quarterly GDP data for Hong Kong are available from the Hong Kong Census and Statistics Department. For other countries, quarterly GDP data are available from DataStream.

In Table 2, we show the summary statistics of quarterly data on democratic accountability and GDP growth rate for the eight economies over the sample period. The average rating of democratic accountability over the sample period has the highest value for the Philippines and the lowest for Hong Kong. Similar to other categories of political risk, democratic accountability is also remarkably stable over time, as shown by the low standard deviations in Table 2. South Korea and Indonesia are the two economies that
have experienced the highest volatile movements in democratic accountability. As for the quarterly GDP growth rates, the standard deviations are high for almost all HAPEs (with the possible exception of Taiwan), which reflects the volatile growth experience of HPAEs, such as during the 1997 Asian financial crisis.

4. Econometric Method

We adopt the autoregressive distributed lag (ARDL) bounds test methodology of Pesaran et al. (2001) to test for the existence of a long-run relationship between democracy and GDP growth using HPAE data from 1984 to 2003. This technique does not require the researcher to assume that the underlying democracy and economic growth series are $I(0)$ or $I(1)$. In particular, we find difficulty in ascertaining whether the index of democracy is stationary. On the one hand, this index can be labeled as stationary because it can only take on a limited range of discrete values. On the other hand, it clearly exhibits patterns of non-stationarity in formal unit root tests. Thus, using the ARDL bounds test approach is especially appealing in this context to avoid confronting the problem of identifying the order of integration for the index of democracy.

The ARDL regression yields a test statistic that can be compared to two asymptotic critical values. If the test statistic is above the upper critical value, then the null hypothesis of no long-run equilibrium relationship between democracy and economic growth can be rejected regardless of whether the series are integrated of the order of zero or one. Alternatively, if the test statistic falls below the lower critical value, then the null hypothesis cannot be rejected, again regardless of whether the series are $I(0)$ or $I(1)$. If the test statistic falls between the bounds of the two critical values, then the result is inconclusive.

The ARDL bounds test approach begins with an unrestricted VAR in levels:

$$(1) \quad x_t = \mu + \sum_{j=1}^{p} \phi_j x_{t-j} + \epsilon_t ,$$

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6 To save space, we do not report the results of stationarity tests, which can be supplied upon request.
7 The discussion of the ARDL bounds test approach here follows closely the exposition of Atkins and Coe (2002).
where \( x_t = (DA_t, \dot{GDP}_t)' \). Here \( DA_t \) and \( \dot{GDP}_t \) are the index of democratic accountability and the growth rate of GDP at time \( t \). As noted earlier, the two series, \( DA_t \) and \( \dot{GDP}_t \), can be either \( I(0) \) or \( I(1) \). \( \mu \) is a vector of constant terms, \( \mu = [\mu_{DA} \quad \mu_{GDP}]' \), and \( \phi_j \) is a matrix of VAR parameters for lag \( j \). The vector of error terms

\[
\epsilon_t = [\epsilon_{DA,t} \quad \epsilon_{GDP,t}]' \sim \text{IN}[0, \Omega],
\]

where \( \Omega \) is positive definite and given by

\[
(2) \quad \Omega = \begin{bmatrix}
\omega_{DA,DA} & \omega_{DA,GDP} \\
\omega_{GDP,DA} & \omega_{GDP,GDP}
\end{bmatrix}.
\]

Given (2), \( \epsilon_{DA,t} \) can be expressed in terms of \( \epsilon_{GDP,t} \) as

\[
(3) \quad \epsilon_{DA,t} = \frac{\omega_{DA,GDP}}{\omega_{GDP,GDP}} \epsilon_{GDP,t} + \mu_t,
\]

where \( \mu_t \sim \text{IN}(0, \omega_{DA,DA}) \).

We manipulate the VAR model of (1) to obtain a vector error correction model (VECM), such as

\[
(4) \quad \Delta x_t = c + \lambda \cdot x_{t-1} + \sum_{j=1}^{p-1} \gamma_j \Delta x_{t-j} + \epsilon_t,
\]

where \( \Delta = 1 - L \), \( L \) is the lag operator, and

\[
(5) \quad \gamma_j = \begin{bmatrix}
\gamma_{DA,DA,j} & \gamma_{DA,GDP,j} \\
\gamma_{GDP,DA,j} & \gamma_{GDP,GDP,j}
\end{bmatrix} = - \sum_{k=j+1}^{p} \varphi_k.
\]

\( \lambda \) in (4) is the long-run multiplier matrix and is given by
where $\mathbf{I}$ is a $2 \times 2$ identity matrix. As each of the series can be either $I(0)$ or $I(1)$, the diagonal elements of the $\lambda$ matrix are left unrestricted. Moreover, we can only test at most one long-run relationship under this procedure. Hence, a zero restriction on one of the off-diagonals of the $\lambda$ matrix is required. We impose $\lambda_{GDP,DA} = 0$, which implies that there is no feedback from $DA_i$ to the level of $GDP_i$. Using the terminology of Pesaran et al. (2001), the growth rate of GDP is a long-run forcing for democracy. However, the validity of the forcing variable assumption can be tested for the exclusion of the lagged democratic accountability in the GDP growth equation of the vector error correction model (VECM) that was described by (4).

Given the assumption of $\lambda_{GDP,DA} = 0$ and (3), the equation for democratic accountability from the VECM of (4) can be written as:

\[
\Delta DA_i = \alpha + \theta G\dot{D}P_{i-1} + \sigma DA_{i-1} + \sum_{j=1}^{p-1} \beta_{GDP,j} \Delta G\dot{D}P_{i-j} + \sum_{j=1}^{q-1} \beta_{DA,j} \Delta DA_{i-j} + \sigma \Delta G\dot{D}P_i + \mu, \tag{7}
\]

where $\alpha = \mu_{DA} - \omega \mu_{GDP}$, $\theta = \lambda_{DA,DA}$, $\sigma = \lambda_{DA,GDP} - \omega \lambda_{GDP,GDP}$, $\beta_{DA,j} = \gamma_{DA,DA,j} - \omega \gamma_{GDP,DA,j}$, $\beta_{GDP,j} = \gamma_{DA,GDP,j} - \omega \gamma_{GDP,GDP,j}$, and $\omega = \frac{\alpha_{DA,GDP}}{\sigma_{GDP,GDP}}$. We can interpret (7) as an ARDL($p$, $q$) model, where $p$ is the number of lagged differences of the growth of GDP and $q$ is the number of lagged differences of democratic accountability. In practice, $p$ and $q$ do not have to be the same, and our search for optimal orders of $p$ and $q$ is based on two considerations. The optimal ARDL($p$, $q$) model must be parsimonious and it must be free of serial-correlation.

In (7), the null hypothesis of no long-run relationship between democratic accountability and the growth rate of GDP is $H_0: \theta = \sigma = 0$. We first estimate (7) by
OLS and then calculate the $F$-statistic for the null hypothesis of $\theta = \sigma = 0$ against the alternative hypothesis that $\theta \neq 0$ and $\sigma \neq 0$. The distribution of the test statistic depends on the order of integration of the two underlying series, and Pesaran et al. (2001) provide the critical values that are calculated from the distribution of test statistics under the null hypothesis. We accept the null hypothesis of no long-run relationship between democratic accountability and the growth rate of GDP if the test statistic falls below the lower critical value. We reject the null hypothesis in favor of the alternative hypothesis if the test statistic exceeds the upper critical value, regardless of whether democratic accountability or the growth rate of GDP is $I(0)$ or $I(1)$. If the test statistic falls between the lower and upper critical values, then the result is inconclusive.

Under the alternative hypothesis that both $\theta \neq 0$ and $\sigma \neq 0$ in (7), there is a stable long-run relationship between democratic accountability and the growth rate of GDP, which is described by

$$
DA_t = \pi_0 + \pi GDP_t + \nu_t,
$$

where $t = 1, 2, \ldots$, $\pi_0 \equiv (\sigma \theta \mu) / \theta$, $\pi \equiv -\sigma / \theta$ and $\nu_t$ is a mean-zero stationary process. Once (7) is estimated and a long-run stable relationship is detected, we can use (8) to calculate the long-run equilibrium relationship.

5. Estimation Results

We apply the above technique to test for the existence of a long-run relationship between democratic accountability and the GDP growth rate for the eight HPAEs. The results of estimating (7) are shown in Table 3. For Hong Kong, ARDL(1,1) is an appropriate model because it is parsimonious and its error terms are not serially correlated, as indicated by the value of the Lagrange Multiplier test statistic of 4.919 with a P-value of 0.296. The test for the presence of a long-run relationship between democratic accountability and the growth rate of GDP results in a $F$-statistic of 2.912, which is below the lower critical value bound of 4.94, thus indicating that the null hypothesis of no long-run relationship between democratic accountability and the growth rate of GDP cannot be rejected at the 5 percent level of significance. The last column in
Table 3 shows the long-run effect of the forcing variable, \( x_t \), on \( y_t \) as indicated by the calculated coefficient, \( \pi \), of (8). We have calculated \( \pi \) to be 2.083 between democratic accountability and the growth rate of GDP, with a P-value of 0.405. As the \( F \)-statistic indicates that there is no evidence of a long-run relationship between democratic accountability and the growth rate of GDP, we can ignore its calculated \( \pi \).

Table 3: Estimation Results for the ARDL Model:

\[
\Delta DA_t = \alpha + \theta G\dot{DP}_{t-1} + \sigma DA_{t-1} + \sum_{j=1}^{p-1} \beta_{GDP,j} \Delta G\dot{DP}_{t-j} + \sum_{j=1}^{q-1} \beta_{DA,j} \Delta DA_{t-j} + \sigma \Delta G\dot{DP}_t + \mu_t
\]

<table>
<thead>
<tr>
<th>Country</th>
<th>Sample period</th>
<th>No. of obs.</th>
<th>( P )</th>
<th>( q )</th>
<th>( \chi^2 ) (P-value)</th>
<th>( F )-statistic</th>
<th>( \pi ) (P-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hong Kong</td>
<td>1984Q2 - 2003Q4</td>
<td>79</td>
<td>1</td>
<td>1</td>
<td>4.919 (0.296)</td>
<td>2.912</td>
<td>2.083 (0.405)</td>
</tr>
<tr>
<td>Indonesia</td>
<td>1994Q2 - 2003Q4</td>
<td>39</td>
<td>1</td>
<td>1</td>
<td>1.818 (0.769)</td>
<td>2.618</td>
<td>2.094 (0.427)</td>
</tr>
<tr>
<td>Malaysia</td>
<td>1992Q2 - 2003Q4</td>
<td>47</td>
<td>1</td>
<td>1</td>
<td>3.162 (0.531)</td>
<td>1.415</td>
<td>4.798 (0.351)</td>
</tr>
<tr>
<td>Philippines</td>
<td>1984Q2 - 2003Q4</td>
<td>79</td>
<td>1</td>
<td>1</td>
<td>5.306 (0.257)</td>
<td>2.454</td>
<td>-12.171 (0.254)</td>
</tr>
<tr>
<td>S. Korea</td>
<td>1984Q2 - 2003Q4</td>
<td>79</td>
<td>1</td>
<td>1</td>
<td>0.431 (0.980)</td>
<td>0.507</td>
<td>104.123 (0.392)</td>
</tr>
<tr>
<td>Singapore</td>
<td>1984Q2 - 2003Q4</td>
<td>79</td>
<td>1</td>
<td>1</td>
<td>1.860 (0.761)</td>
<td>4.514</td>
<td>4.580 (0.116)</td>
</tr>
<tr>
<td>Taiwan</td>
<td>1984Q2 - 2003Q4</td>
<td>79</td>
<td>2</td>
<td>1</td>
<td>3.571 (0.467)</td>
<td>1.730</td>
<td>-21.072 (0.172)</td>
</tr>
<tr>
<td>Thailand</td>
<td>1994Q2 - 2003Q4</td>
<td>39</td>
<td>1</td>
<td>1</td>
<td>7.482 (0.112)</td>
<td>2.953</td>
<td>1.500 (0.403)</td>
</tr>
</tbody>
</table>

Note: \( P \) and \( q \) are the number of lagged differences of the explained and explanatory variables. The \( \chi^2 \) statistic tests for the null hypothesis of no serial correlation. The \( F \)-statistic tests for the null hypothesis of no long-run equilibrium relationship between the explained and explanatory variables. \( \pi \) is an estimate of the long-run marginal effect of the explanatory variable on the explained variable. The P-value for \( \pi \) is calculated using the delta method. The upper and lower critical value bounds for the \( F \)-statistics are 5.73 and 4.94 for the 5% significance level.

We obtain results that are similar to those for Hong Kong from estimating (7) for the other HPAEs, as shown by Table 3. For all other HPAEs, the estimation of their appropriate models yields a statistically insignificant long-run relationship between democratic accountability and the growth rate of GDP at the conventional level. Thus, we cannot reject the null hypothesis of no long-run relationship between democratic accountability and the growth rate of GDP for each economy in the sample. In sum, the
results of estimating (7) for the HPAEs over the sample period do not support the view that rising income levels affect democratic accountability.

Table 4: Estimation Results for the ARDL Model:

\[ \Delta GDP_t = \alpha + \theta GDP_{t-1} + \sigma DA_{t-1} + \sum_{j=1}^{p-1} \beta_{GDP,j} \Delta GDP_{t-j} + \sum_{j=1}^{q-1} \beta_{DA,j} \Delta DA_{t-j} + \omega \Delta DA_t + \mu_t \]

<table>
<thead>
<tr>
<th>Country</th>
<th>Sample period</th>
<th>No. of obs.</th>
<th>p</th>
<th>q</th>
<th>( \chi^2 ) (P-value)</th>
<th>F-statistic</th>
<th>( \pi ) (P-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hong Kong</td>
<td>1984Q2-2003Q4</td>
<td>79</td>
<td>4</td>
<td>1</td>
<td>8.377 (0.079)</td>
<td>8.631**</td>
<td>0.016</td>
</tr>
<tr>
<td>Indonesia</td>
<td>1994Q2-2003Q4</td>
<td>39</td>
<td>1</td>
<td>1</td>
<td>4.173 (0.383)</td>
<td>5.040*</td>
<td>0.033</td>
</tr>
<tr>
<td>Malaysia</td>
<td>1992Q2-2003Q4</td>
<td>47</td>
<td>2</td>
<td>2</td>
<td>6.379 (0.173)</td>
<td>5.164*</td>
<td>0.027</td>
</tr>
<tr>
<td>Philippines</td>
<td>1984Q2-2003Q4</td>
<td>79</td>
<td>1</td>
<td>1</td>
<td>1.857 (0.762)</td>
<td>6.066**</td>
<td>0.012</td>
</tr>
<tr>
<td>S. Korea</td>
<td>1984Q2-2003Q4</td>
<td>79</td>
<td>2</td>
<td>1</td>
<td>6.186 (0.186)</td>
<td>13.188**</td>
<td>-0.012</td>
</tr>
<tr>
<td>Singapore</td>
<td>1984Q2-2003Q4</td>
<td>79</td>
<td>7</td>
<td>1</td>
<td>8.155 (0.086)</td>
<td>14.566**</td>
<td>0.052</td>
</tr>
<tr>
<td>Taiwan</td>
<td>1984Q2-2003Q4</td>
<td>79</td>
<td>2</td>
<td>1</td>
<td>8.523 (0.074)</td>
<td>7.429**</td>
<td>-0.017</td>
</tr>
<tr>
<td>Thailand</td>
<td>1994Q2-2003Q4</td>
<td>39</td>
<td>1</td>
<td>1</td>
<td>4.487 (0.344)</td>
<td>11.209**</td>
<td>-0.088</td>
</tr>
</tbody>
</table>

Note: p and q are the number of lagged differences of the explained and explanatory variables. The \( \chi^2 \) statistic tests for the null hypothesis of no serial correlation. The F-statistic tests for the null hypothesis of no long-run equilibrium relationship between the explained and explanatory variables. \( \pi \) is an estimate of the long-run marginal effect of the explanatory variable on the explained variable. The P-value for \( \pi \) is calculated using the delta method. The upper and lower critical value bounds for the F-statistics are 5.73 and 4.94 for the 5% significance level. ** and * denote five and one percent significance, respectively.

In (7), we assume that the growth rate of GDP is long-run forcing for democratic accountability. If, instead, we assume that democratic accountability is long-run forcing for the growth rate of GDP as in (9) below, then can we detect a long-run relationship between the same two variables?

\[ \Delta GDP_t = \alpha + \theta GDP_{t-1} + \sigma DA_{t-1} + \sum_{j=1}^{p-1} \beta_{GDP,j} \Delta GDP_{t-j} + \sum_{j=1}^{q-1} \beta_{DA,j} \Delta DA_{t-j} + \omega \Delta DA_t + \mu_t \]

The estimation results for (9) are shown in Table 4. This time, the appropriate model for Hong Kong is ARDL(4,1), which is parsimonious and without serial correlation as
indicated by the value of the Lagrange Multiplier test statistic and its accompanying P-value. The $F$-statistic of 8.631, which is larger than the critical value of 5.73 at the 5 percent significance level, indicates that there is a significant long-run relationship between democratic accountability and the growth rate of GDP, with the direction of causality running from democratic accountability to the growth rate of GDP. Specifically, the growth rate of GDP increases by 1.6 percent in response to an increase of every point in democratic accountability ($\pi = 0.016$). This increase is both statistically and economically significant.

The estimation results for the other HPAEs are similar to those of Hong Kong, as shown in Table 4. All show a statistically significant long-run relationship between democratic accountability and the growth rate of GDP at either the 5 or 10 percent level. This significant long-run relationship indicates that democratic accountability affected the rate of GDP growth over the sample period for all HPAEs. More importantly, the calculated long-run relationship, $\pi$, in Table 4 indicates that the effect of democratic accountability on the rate of GDP growth is not always positive, and can also be negative. Hong Kong, Indonesia, Malaysia, the Philippines, and Singapore have a positive calculated $\pi$, which shows that an improvement in democratic accountability contributes to a higher rate of GDP growth. In contrast, South Korea, Taiwan, and Thailand have a negative calculated $\pi$, which shows that an improvement in democratic accountability reduces the rate of growth of GDP in these countries. These empirical results conform to the general findings in the literature that the net effect of democracy on growth through different distinct channels may either be positive or negative.

6. Discussion

In this section, we first address the possible biases that may render our results invalid and then interpret the results in the context of HPAEs.

We are concerned about a possible source of endogeneity between growth and democratic accountability. In particular, democratic accountability may go down when growth is low and up when growth is high. That is, when things are good there is no need to hold anyone accountable, but when things are bad, the resistance of public officials to calls for accountability may be more salient. If there is endogeneity between growth and
democratic accountability, then it should generate an artificial causal relationship running from growth to democratic accountability. Our results, however, show that democratic accountability causes growth rather than the other way around. Thus, the fact that our results do not show any significant causal relationship running from growth to democratic accountability despite a possible source of bias for observing such a relationship increases our confidence in the validity of our results. Moreover, if there is endogeneity, democratic accountability and growth are expected to have a high contemporaneous correlation. However, we fail to find a high correlation between the two variables. For example, in Hong Kong the contemporaneous correlation coefficient between the two variables is 0.1013.

Another common concern about causality tests is that the expectation of a future event may invalidate test results. Our results would be invalidated if the fall (rise) in democratic accountability is due to the expectation of a weakening (strengthening) of growth in the future, and causality tests may indicate incorrectly that democratic accountability causes growth, rather than growth causes democratic accountability. However, we do not believe such bias is likely because people cannot make accurate predictions of future growth and, more importantly, policymakers are unlikely to react to possible changes in the growth rate.

The growth experience of HPAEs during the sample period appears to confirm our empirical results. These results consistently show that growth has little effect on democratic accountability, whereas democratic accountability has a significant positive or negative effect on growth. Here, we ask why we obtain such a robust result for every HPAE during the sample period.

The answer appears to point to the observation that regimes in HPAEs tend to be authoritarian, and have been reluctant to yield to increasing popular demand for democracy. Rather than adopting a more democratic approach to governance, these regimes strive to sustain high rates of economic growth. Economic prosperity justifies the continuing concentration of political power and the survival of the political regimes. Economic disasters, in contrast, undermine the authority of or even topple HPAE regimes, as shown by the fall of the governments in Thailand and Indonesia as a direct consequence of the 1997 Asian financial crisis.
Many people in some HPAEs continue to have little political freedom despite rapid increases in income levels for the past three decades. After the changeover of sovereignty to China, people in the Hong Kong Special Administrative Region enjoy little democracy, with their Chief Executive elected by a group of representatives chosen by the Chinese central government and the Legislative Council occupied by a large number of pro-government appointed members. Singapore has remained under the rule of the People’s Action Party since its independence in 1965. Opposition in Singapore has been stifled by the government through litigation or the use of the Internal Security Act. Similarly, Malaysia has been ruled by the United Malays National Organization, largely headed by former leader Mahathir Mohamad, for most of its independence. Opposition leaders are subject to regular detention and intimidation under the Malaysian Internal Security Act. Clearly, rapid economic growth in these HPAEs has not given rise to more political freedom or democracy.

It is true that substantial democratization has taken place in many HPAEs such as Indonesia, the Philippines, South Korea, Taiwan, and Thailand. However, it appears that the major forces for democratization in these HPAEs were not economic, but a combination of domestic and international forces contributing to the eventual collapse of autocratic rule. Political scientists have argued that the end of the Cold War and the transformation of former Soviet bloc were critical forces shaping democratization in many HPAEs such as the Philippines, South Korea, and Taiwan. In addition, the level of civilian control over the military has played a vital role in the democratization process. It has been said that the most important causal factor for the realization and establishment of democracy in a given country in Asia is the level of institutional and cultural influence from Western countries that practice democracy.\(^8\) The main conclusion of the analysis from this literature is that democracy is not determined by economic preconditions, but rather that it largely results from power struggles between political forces that could last for decades or even centuries.

There is little doubt that economic growth increases the popular demand for democracy through higher levels of education, a larger middle class and greater exposure

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\(^8\) Both Friedman (1994) and Schmiegelow (1997) provide detailed cross-country and country-specific studies of democratization in Asia from a political perspective.
to democratic ideals through integration with the rest of the world. However, all of these influences are not sufficient to bring about any real improvement in democracy, as illustrated by the experience of HPAEs, and in particular China, which we did not include in our analysis due to a lack of creditable quarterly GDP data. Had we included China, we would likely have found its result consistent to be with those of the other HPAEs. China has achieved an extraordinary rate of economic growth during the past two decades, but little progress, if any, in democracy has been made. A well-known comment by senior Chinese leaders is that democracy must “wait”. Clearly, in the case of China and certain HPAEs, increasing economic prosperity undermines rather than enhances the process of democratization.

Finally, our empirical results show that democracy affects growth in different ways. How do we explain why some economies, such as Hong Kong, Indonesia and Singapore grow faster with democratization, whereas others, such as South Korea and Thailand, have their growth rate retarded by democratization? An explanation offered by Lee (2003) is that a democratic regime grows more rapidly than an oligarchic regime if the redistribution system is elitist or income distribution is less skewed. A less egalitarian redistribution system provides more incentives for investment and consequently more potential for growth. Individuals in Hong Kong, for example, pay no more than 15 percent of their salary in income tax, whereas in South Korea the top income tax rate is 50 percent. Those HPAEs that show democracy enhancing growth have a relatively less progressive tax structure with the top income tax rate no higher than 30 percent. However, for those HPAE that show democracy retarding growth, the top income tax rates are above 30 percent. We do not intend to push this line of argument too far, but the bottom line is that democratization can either generate a higher growth rate or reduce income inequality through a more egalitarian redistribution system, both of which can be desirable.

7. Conclusion

This paper attempts to answer the question of whether rising income levels help to accelerate the pace of democratization in HPAEs. It adopts the relatively new ARDL bounds test approach to test the direction of causality between democratic accountability
and growth. The test results consistently show that for all eight HPAEs, the direction of causality only runs from democratic accountability to growth and not the other way around. These results provide evidence to support the argument that rapid economic growth does not necessarily give rise to democratization. Rather than determined by economic preconditions, democratization in a country largely results from institutional and cultural influence from Western countries that practice democracy, and power struggles between clashing forces that could last for decades or even centuries.

Our results show that democratization significantly affects growth in HAPEs, but the effect is not consistent across all eight HPAEs. For South Korea, Taiwan, and Thailand, the effect of democratization on growth is negative, whereas for Hong Kong, Indonesia, Malaysia, the Philippines, and Singapore, the effect is positive. As there are many channels through which democracy affects growth, the net effect ultimately depends on the relative strength of each of these factors. Moreover, if the redistribution scheme in an economy is more elitist, democratization tends to generate a higher growth rate.

The findings of this paper dispel a common idea that economic prosperity is good for democracy. We agree with the literature that growth to a certain degree increases the popular demand for democracy. However, such an increase does not necessarily outweigh the cost of participating in democratic movements for individuals and the costs of losing power for ruling classes. Rising income levels raise those costs, and thus inhibit rather than enhance democratization.\(^9\) Contrary to the suggestion of Glaeser et al. (2004) that countries which emerge from poverty under dictatorships are increasingly likely to improve their institutions once they become richer, our evidence suggests a more accurate picture of the world is that rapidly developing countries that have weak democratic institutions are more likely to stay that way even after they become richer.

\(^9\) We fail to detect such a link in our causality tests.
References


