

## **Preliminary Draft. Please Do Not Quote**

### **Financial System Dynamics: An Econometric Analysis of Convergence**

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#### **Abstract.**

In this paper, we apply the new panel convergence methodology developed by Phillips and Sul (2007a) on the financial indices from the World Bank's *Financial Development and Structure* database, to examine the degree and speed of convergence of the financial systems across a large set of industrial and developing countries. Among the notable results, there is no convergence for any segment of the financial system. Instead, the various segments converge to different sub-groups that transcend the distinction between industrial vs. developing countries. Perhaps more surprisingly, the weakest/least convergence is found for the banking and the stock market segments. Most importantly, though, instead of converging, the financial systems of industrial and developing countries seem to diverge with the passage of time.

JEL Classification: G10, G20, C32, C33

Keywords: Financial system development, Structure, Convergence, Transition curve

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\*Corresponding author. We thank Donggyu Sul for making the Gauss code available to us. A sample code can be downloaded from Donggyu Sul's homepage: <http://homes.eco.auckland.ac.nz/dsul013/>. The usual disclaimer applies.

## Introduction

In this paper, we apply the new panel convergence methodology developed by Phillips and Sul (2007a) (henceforth PS) on the financial indices from the World Bank's *Financial Development and Structure* database, to examine the degree and speed of convergence of the financial systems across a large set of industrial and developing countries. The rationale is provided by the common drivers behind the profound transformation of the financial systems all over the world during the past three decades, namely, the worldwide wave of financial liberalization and deregulation, rapid technological change, far-reaching globalization and fierce competition. The motivation is provided by the relatively little attention the issue of financial system convergence has received in the literature so far, despite its significance and profound policy implications.

The existing literature has mostly focused on the differences between financial systems structures (e.g. Allen and Gale, 2000, Allen et al. 2004) and the sources behind different levels of financial development. In the latter, the law and finance theory (La Porta et al., 1997, 2000, 2007) stress the importance of legal origins –which spread worldwide through conquest, colonization and imitation- in explaining differences on investor protection laws and property rights and thus, financial development and structure. Within the context of this theory, two interrelated channels are highlighted: the political and the adaptability channels (Beck et al., 2003b). The former emphasizes the degree to which the state controls the judiciary, the latter focuses on the law making process, or, to put it differently, the ability of legal systems to evolve over time. On the other hand, the endowment theory (Acemoglu et al., 2001), although not in contrast to the law and finance view, emphasizes the role of geography and the disease environment in shaping institutional development established by European colonizers, and through this, the level of financial development. Stulz and Williamson (2003) and Guiso et al. (2004) attribute the observed differences in financial development to culture and/or religion.

Examining the differences in financial development in a cross-sectional setting under the prism of these theories, Beck et al. (2003a) provide evidence for both the law and finance and the endowment theories and note that stock markets tend to rely more than banks on well functioning legal systems to defend the rights of individual investors. In another paper (2003b), their empirical results favor more the adaptability than the political channel, while they show

that German civil law and British common law countries protect better the property rights and as a result, they have significantly better developed financial intermediaries and markets than French civil law countries. Following other approaches, Japelli and Pagano (2000) find that the breadth of credit markets is associated with greater information sharing, while Guiso et al (2000) and Calderon et al (2001) enhance the role of trust on financial development.

Finally, very few studies deal with the evolution and/or the concept of convergence of financial systems. For example, Bianco *et al.* (1997), based on comparative statics of financial outcomes, assert that the convergence of the financial systems of the major six developed countries is limited. Schmidt *et al.* (2001) reach a similar conclusion examining the issue of convergence of the European financial systems until 2001, after the implementation of the European Single Market in the early 1990's. Rajan and Zingales (2003a, b), by adopting political theories of finance, argue that the move of European financial systems towards a more market oriented norm is likely to slow down, and that financial systems are influenced by such factors as the legal infrastructure, political tradition, and economic and financial history. Djankov *et al.* (2007) examine private credit using a large set of countries in a panel setting and provide evidence that improvements in creditor rights and information sharing are positively related to increases in private credit. However, they find that creditor rights are remarkably stable over time, while legal origins are important determinants of both creditor rights and information sharing institutions.

In this paper, we examine for the first time in the literature the convergence in the outcomes of the main segments of the financial system across a large set of countries for the period 1987-2005. We apply the panel convergence technique developed by PS to seventeen indices from the World Bank's *Financial Development and Structure* database. This technique allows us to explore not only the issue of convergence among the sample countries, but also to examine the course of development for each financial index for each country/group of countries, relative to the sample average. The indices used cover adequately the financial intermediaries, insurance, stock and bond markets, as well as the structure of the banking industry.

Our results are summarized as follows: 1) There is no convergence among the countries in the full sample in any outcome of the financial system. 2) Certain convergent subgroups of countries are identified for each index. However the composition of these subgroups for many

of the financial indices transcends the distinction between developed vs. developing countries. 3) There is greater variety in the sample countries with respect to the banking structure and the stock market than for the other segments of their financial system. 4) The gap, in terms of financial development, between the advanced and the poorer countries seems to widen, as time goes by.

The rest of the paper is organized as follows: Section 2 presents the econometric methodology, while Section 3 describes the data. Section 4 discusses the results of the empirical analysis and Section 5 concludes.

## 2. Econometric Methodology

In this section, we outline the methodology proposed by Phillips and Sul (2007a) to test for convergence in a panel of countries. We also briefly discuss the clustering algorithm that allows us to classify countries into club convergence groups.<sup>1</sup>

### 2.1 The $\log t$ Test

Let us have panel data for a variable  $X_{it}$ , where  $i = 1, \dots, N$  and  $t = 1, \dots, T$ , with  $N, T$  the number of countries and the sample size, respectively. Often  $X_{it}$  is decomposed into two components, one systematic,  $g_{it}$ , and one transitory  $a_{it}$ . So  $X_{it}$  is written as follows:

$$X_{it} = g_{it} + a_{it} \quad (1)$$

PS transform (1) in a way that common and idiosyncratic components in the panel are separated. Specifically,

$$X_{it} = \frac{g_{it} + a_{it}}{\mu_t} \quad \mu_t = \delta_{it} \mu_t, \text{ for all } i, t \quad (2)$$

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<sup>1</sup>This algorithm was also put forward by Phillips and Sul (2007a) and has been employed in Phillips and Sul (2007b, 2007c).

In this way, the variable of interest,  $X_{it}$ , is decomposed in two components, one common,  $\mu_t$ , and one idiosyncratic,  $\delta_{it}$ , both of which are time varying. This formulation enables testing for convergence by testing whether the factor loadings  $\delta_{it}$  converge. To do so PS define the relative transition parameter,  $h_{it}$ , as

$$h_{it} = \frac{X_{it}}{\frac{1}{N} \sum X_{it}} = \frac{\delta_{it}}{\frac{1}{N} \sum \delta_{it}}$$

which measures the loading coefficient  $\delta_{it}$  in relation to the panel and as such the transition path for the economy  $i$  relative to the panel average.

In our context, given the relatively small time dimension of our sample and since our interest is on the long-run behaviour of the variables under examination, we first take logarithms in order to expand any differences in levels. Next, we remove the cycle component of  $X_{it}$  where necessary, by employing the Hodrick-Prescot (1997) filter. The only input required is a smoothing parameter determined mainly by the frequency of the data.<sup>2</sup> Having extracted the trend component from the series denoted as  $\hat{X}_{it}$  we calculate the estimated

transition paths as  $\hat{h}_{it} = \frac{\hat{X}_{it}}{\frac{1}{N} \sum \hat{X}_{it}}$ . Next we construct the cross-sectional variation ratio  $H_1 / H_t$

where

$$H_t = \frac{1}{N} \sum_{i=1}^N (\hat{h}_{it} - 1)^2$$

that measures the distance of the panel from the common limit. PS show that the transition distance  $H_t$  has a limiting form of

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<sup>2</sup> In our application with annual data, the smoothing parameter  $\lambda$ , is set equal to 100.

$$H_t \sim \frac{A}{L(t)^2 t^{2\alpha}} \text{ as } t \rightarrow \infty$$

where  $A$  is a positive constant,  $L(t)$  is a slowly varying function, such as  $\log(t), \log(t+1), \log^2(t+1)$ , and  $\alpha$  denotes the speed of convergence. To test for the null hypothesis of convergence,

$$\mathbf{H}_0 : \delta_i = \delta \text{ and } \alpha \geq 0$$

against the alternative

$$\mathbf{H}_A : \delta_i \neq \delta \text{ for all } i, \text{ or } \alpha < 0$$

PS test  $\mathbf{H}_0$  in the context of the following logt regression

$$\log\left(\frac{H_1}{H_t}\right) - 2\log L(t) = \hat{c} + \hat{b} \log t + u_t$$

where  $L(t) = \log(t+1)$ . The fitted coefficient of  $\log t$  is  $\hat{b} = 2\hat{\alpha}$  where  $\hat{\alpha}$  is the estimate of  $\alpha$  in  $\mathbf{H}_0$ . The standard error of the estimates is calculated using a HAC estimator for the long-run variance of the residuals. In this study, we employ the Quadratic spectral kernel and determine the bandwidth by means of the Andrews (1991) data-dependent procedure. By employing the conventional  $t$ -statistic  $t_b$  the null hypothesis of convergence is rejected if  $t_b < -1.65$ . In practice this regression is run after a fraction of the sample is removed. PS recommend starting the regression at some point  $t = [rT]$ , where  $[rT]$  is the integer part of  $rT$ , and  $r = 0.3$ .<sup>3</sup>

This null hypothesis implies relative convergence (conditional convergence) rather than absolute convergence (convergence in level). If we change the null hypothesis to  $\alpha \geq 1$ , which is equivalent to  $\hat{b} \geq 2$  we can test for absolute convergence.

Given that rejection of the null for the panel as a whole does not imply the absence of

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<sup>3</sup> Extensive Monte Carlo simulations conducted by Phillips and Sul (2007a) show that  $r = 0.3$  is satisfactory in terms of both size and power.

club convergence, PS go one step beyond and develop an algorithm for club convergence. We next briefly outline the basic steps of the respective algorithm.

## 2.2. Club Convergence algorithm

**Step 1 (Ordering):** Order the members of the panel according to the last observation.

**Step2 (Core Group formation):** Calculate the convergence t-stat,  $t_k$ , for sequential  $\log t$  regressions based on the  $k$  highest members (Step 1) with  $2 \leq k \leq N$ . The core group size is chosen on the basis of the maximum of  $t_k$  with  $t_k > -1.65$ .

**Step 3 (Club Membership):** Select countries for membership in the core group (Step2) by adding one at a time. Include the new country (member) if the associated t-stat is greater than zero (conservative choice). Make sure that the club satisfies the criterion for convergence.

**Step 4 (Recursion and Stopping):** The countries not selected in the club formed in step 3, form a complement group. Run the  $\log t$  regression for this set of countries. If it converges, then these countries form a second club. If not, Steps 1 to 3 should be repeated, in order to reveal some sub convergent clusters. If no core group can be found (Step 2), then these countries display a divergent behaviour.

## 3. Data Description

The data comes from the *World Bank's Financial Development and Structure Database* (Beck *et al.* 2000). This database provides measures for the size, activity and efficiency of all segments of the financial systems, i.e., banks and other financial intermediaries, insurance companies and the stock and bond markets, on a yearly basis and in a consistent way across countries and time.

Due to data availability considerations, together with the need for a balanced dataset across each index and the various segments of the financial system, we restrict our analysis to the seventeen indices shown in Table 1 and to the countries these data are available for a common time period. Thus, the period examined ranges from 1987-2005 to 1990-2005 for different indices, while the countries included range from 39 for the stock and public bond

markets and the structure of the banking system to 35 for the private bond market. For more details about the period examined for each index and the countries included see Table 1.

#### Insert Table 1

The indices used cover adequately the major segments of the financial system, namely, financial intermediaries (banks and other financial intermediaries), and the stock and bond markets. In addition, due to their scaling, usually with the gross domestic product (GDP), the different economic size of the sample countries does not drive the results, nor does it affect their interpretation.

From these indices, V1 to V7 refer to the size and activity of the financial intermediaries segment. Specifically, V1 refers to the role of the central bank in the financial intermediation process – generally a high V1 indicates a liberalized financial system in which the central bank plays a minor role in the intermediation process; V2 refers to overall liquidity in the economy – a variable indicative of the level of financial intermediation; V3 to the size of the traditional banking segment; while V4 and V5 to the size of deposits to banks and financial institutions in general, respectively. V6 and V7 refer to private credit by banks and other financial institutions, allowing a comparison of their relative strength in providing credit to the private sector.

V8 to V10 refer to the efficiency and structure of the banking segment. In greater detail, V8 refers to banks' overhead costs, with a low value indicating an efficient banking system; V9 to banks' net interest margin, a low value of which is usually associated with a competitive banking system; and V10 to bank concentration.

The remaining seven indices pertain to the other major segments of the financial system. Specifically, V11 and V12 refer to the development of the insurance industry; V13, V14 and V15 to the size, activity and efficiency of the stock market – the last two being measured by liquidity and turnover ratio respectively (Beck *et al.*, 2000); and V16 and V17 to the size of the private and public bond markets.



#### 4. Empirical Analysis

The analysis offers some new important insights about the course of the outcomes of the countries' financial system and provides an answer to the question whether the sample countries' financial systems converge. The main results can be summarized as follows:

- There is no convergence in any outcome of the financial system among the countries in the full sample.
- The number of convergent subgroups of countries identified is higher for the indices pertaining to the banking structure and the stock market segment than that for the indices pertaining to the other segments of the financial systems, i.e., financial intermediaries, insurance and bond markets' segments.
- There is considerably bigger distance<sup>4</sup> between subgroups' transition curves for almost all the financial development indices at the end of the sample period than in the beginning. This is more apparent for the stock market indices.
- The gap, in terms of financial development, between the advanced and the poorer countries seems to widen, as time goes by.

More specifically, Table 1 presents the results of the full convergence test for each financial development index. In Panel A are reported the results for the indices pertaining to the financial intermediaries' segment, while in Panels B to D the relevant results for the indices pertaining to the insurance segment, stock and bond markets respectively. For each index the estimated logt coefficient (t-statistic in parenthesis) is reported.

As this Table indicates, the null hypothesis of full convergence is rejected for all indices at the 5% level. In other words, there is no convergence in any outcome of the financial system among the countries in the full sample. Thus, the next step of the analysis is to examine whether there are subgroups (hereafter, the terms group and club will be used interchangeably) of countries that converge, employing the algorithm described in section 2.2. Figures 1a to 17a graphically illustrate the results of this analysis. Dotted lines indicate the sub-clubs that converge to form subgroups, marked by continuous lines. The number of countries is reported

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<sup>4</sup> In our setting, for each index, the distance between the transition curves of two subgroups at a certain point in time is a measure of the gap in the outcome of the relevant index between these groups.

in brackets. Additionally, the relative transition curves for the clubs identified for each index are plotted in figures 1b to 17b.

As discussed in the econometric methodology in section 3.1, these curves present the relative transition coefficients  $h_{it}$ , which measure the transition element for subgroup  $i$  relative to the cross-section average, for each index. Thus, these figures eloquently capture the growth course for each subgroup, relatively to the sample average. Curves' points that are above one indicate that the relevant group's financial development index is *below*<sup>5</sup> the cross-section average at a certain point in time and vice versa. Ideally, full convergence would be present when all countries' curves were moving asymptotically towards one. In addition, the slope of each curve can be interpreted as the growth rate for the relevant subgroup, *relatively* to the cross-section average.

In detail, figures 1a and 1b present the results for the subgroup membership and their transition curves for the role of the central bank in the financial intermediation process (index V1). A large subgroup is formed with almost all countries, indicating that by the mid 1990's they had liberalized their financial system. Argentina, Brazil and Turkey form a subgroup of their own. These three countries lagged behind the others at the beginning of the sample period, however they were at a course of convergence to the main subgroup until the late 1990's, a situation that reversed thereafter, possibly due the financial crises these countries experienced at this time.

For liquid liabilities and deposit money bank assets to GDP (indices V2 and V3), three clubs are identified (figures 2a and 3a). These clubs tend to diverge from each other for both indices, as the transition curves in figures 2b and 3b clearly indicate. The variety of financial institutions in the sample countries is amply highlighted in figures 4a through 7a. Specifically, while for bank deposits (index V4) only two clubs are formed, roughly comprising of more vs. less developed countries, which additionally strongly diverge between them (figure 4b), there considerable much greater variety identified when financial system deposits (index V5) is examined. Indeed, for the latter index, many sub-clubs are formed (figure 5a), some of which converge to each other, forming bigger clubs. Finally, four clubs are identified, two more than in the bank deposits case, which, as in the previous case, follow divergent paths (figure 5b),

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<sup>5</sup> Due to the logarithmic transformation of the variables, a lower value of the transition curve indicates a higher value of the index examined relative to the cross-section average.

albeit with a slower rate. As for private credit by banks and other financial intermediaries (indices V6 and V7) five and three clubs respectively are being formed (figures 6a and 7a). The fact that the number of convergent subgroups identified decrease when other financial intermediaries are included in the private credit measure, may be attributed to the complement services these institutions provide in the channeling of funds to borrowers. Nevertheless, for both indices, the gap between developed and developing countries seems to widen, as time goes by.

As far as it concerns the structure of the banking segment, the analysis reveals that there is greater homogeneity between countries with respect to overhead costs (index V8) whereas three subgroups are formed (figure 8a) which, however, diverge from each other (figure 8b) than for net interest margin and especially concentration (indices V9 and V10). Indeed, four and five clubs respectively are present (figures 9a and 10a).

Turning to the insurance segment, three clubs are identified for both the life and non-life insurance penetration (indices V11 and V12). As the relevant transition curves indicates (figures 11b and 12b), for non-life insurance the distance between the subgroups' curves widens as we move towards the end of the sample period, while it remains relatively stable for life insurance penetration.

As for the stock market segment, the analysis suggests that there is greater variation within the sample countries for the stock market size, liquidity and depth than for the other segments of the financial system. Specifically, four clubs are formed for the stock market capitalization (index V13), one of them resulting from the convergence of three sub-clubs (figure 10a). The number of clubs identified rises to six for the stock market total value traded and turnover ratio (indices V14 and V15). Perhaps more importantly, not only the distance between the subgroups of countries more than doubled until the end of the sample period, but also keeps widening further, with no signs of reverse in the near future.

Finally, for the private and public bond markets (indices V16 and V17) the number of subgroups decreases relative to that for the stock market case. For the private bond market three groups are formed (figure 13a), one of them comprising of Denmark and the United States which have the largest markets. The second subgroup, comprising of the vast majority of the sample countries, follows an almost parallel path relative to the former (figure 13b). As for the public bond market, with the exception of Australia, Japan and Norway, which diverge

from the average, a major club is formed comprising of the rest countries (figure 17a). Australia and Norway have public bond markets which are smaller, while Japan's is bigger than the sample average.

## **5. Conclusions**

The issue of financial system convergence, while of great importance for its profound policy implications and for better understanding the way financial system operates has received scarce attention so far. This paper, applying the new panel convergence methodology developed by Philips and Sul (2007) explores this theme for the outcomes of the main segments of the financial system across a large set of countries during the last decades. Our analysis suggests that different convergent subgroups of countries are formed, the number of which is greater for the stock market and the structure of the banking industry than for financial intermediaries, insurance and the bond markets. Additionally, the synthesis of these subgroups for many of the financial indices transcends the distinction between developed vs. developing countries, while the gap in financial development between the advanced and the poorer countries seems to widen, as time goes by.

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**Table 1.**

<b>Financial Development and Structure Indices</b>			
	Index	Definition	Sample Period
V1	Deposit Money Bank vs. Central Bank Assets	Ratio of deposit money bank claims on domestic non-financial real sector to the sum of deposit money bank and Central Bank claims on domestic non-financial real sector	1987 -2005
V2	Liquid Liabilities	Liquid liabilities to GDP	
V3	Deposit Money Bank Assets to GDP	Claims on domestic real non-financial sector by deposit money banks as a share of GDP	
V4	Bank Deposits	Demand, time and saving deposits in deposit money banks as a share of GDP	
V5	Financial System Deposits	Demand, time and saving deposits in deposit money banks and other financial institutions as a share of GDP	
V6	Private Credit by Deposit Money Banks to GDP	Private credit by deposit money banks to GDP	
V7	Private Credit by Deposit Money Banks and Other Financial Institutions to GDP	Private credit by deposit money banks and other financial institutions to GDP	
V8	Overhead Costs	Accounting value of a bank's overhead costs as a share of its total assets	1990-2005
V9	Net Interest Margin	Accounting value of bank's net interest revenue as a share of its interest-bearing (total earning) assets	
V10	Concentration	Assets of three largest banks as a share of assets of all commercial banks in the system	
V11	Life Insurance Penetration	Life insurance premium volume as a share of GDP	1987 -2005
V12	Non-life Insurance Penetration	Non-life insurance premium volume as a share of GDP	
V13	Stock Market Capitalization to GDP	Value of listed shares to GDP	1989-2005
V14	Stock Market Total Value Traded to GDP	Total shares traded on the stock market exchange to GDP.	

V15	Stock Market Turnover Ratio	Ratio of the value of total shares traded and average real market capitalization	
V16	Private Bond Market Capitalization to GDP	Private domestic debt securities issued by financial institutions and corporations as a share of GDP	1990-2005
V17	Public Bond Market Capitalization to GDP	Public domestic debt securities issued by government as a share of GDP	

Notes:

1. Source: *Financial Development and Structure* database, World Bank
2. Sample countries:
  - Index V1 (35 countries): Argentina, Australia, Austria, Belgium, Brazil, Canada, Chile, Colombia, Denmark, Finland, France, Germany, Greece, Hungary, India, Italy, Japan, Korea, Malaysia, Mexico, Netherlands, New Zealand, Norway, Pakistan, Peru, Philippines, Poland, Portugal, South Africa, Spain, Switzerland, Thailand, Turkey, United Kingdom and United States
  - Indices V2-V7 (38 countries): All the above plus Hong Kong, Singapore and Sweden.
  - Indices V8-V10, V13-V15 and V17 (39 countries): All the above plus China, Hong Kong, Singapore and Sweden.
  - Indices V11 and V12 (38 countries): All the above plus China, Singapore and Sweden.
  - Index V16 (35 countries): All the above except Norway, Pakistan, Philippines, Poland and Turkey, plus China, Hong Kong, Ireland, Singapore and Sweden.



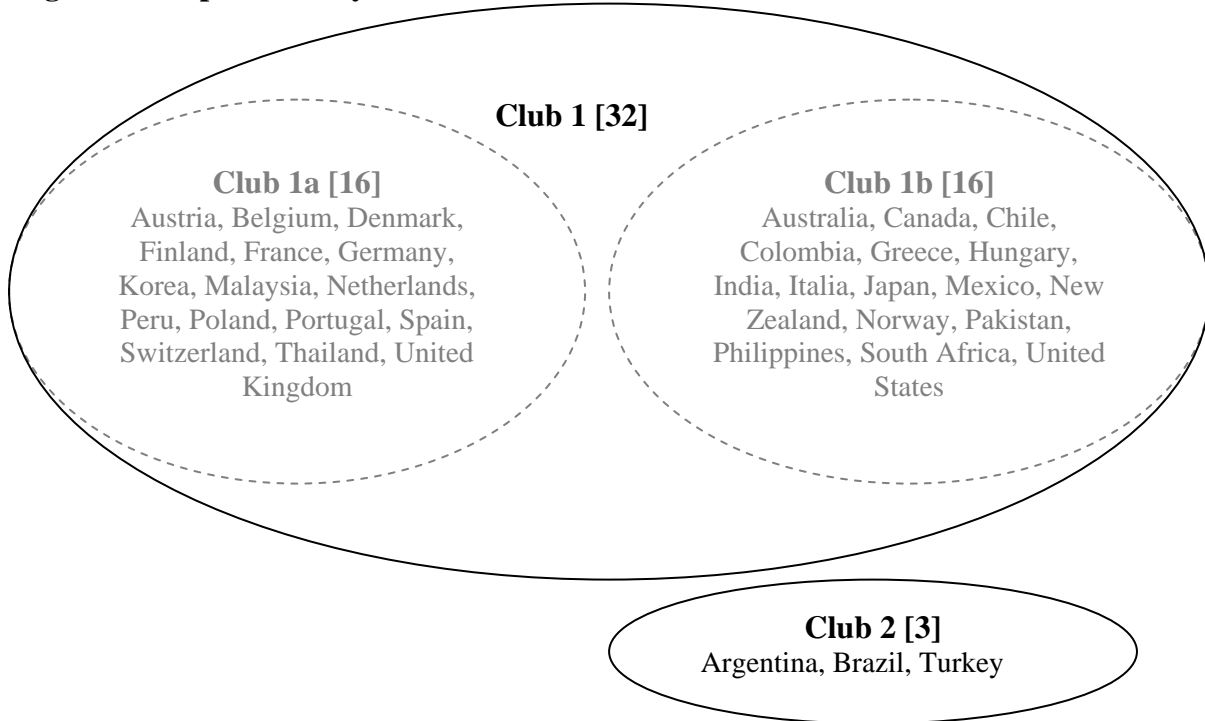
**Table 2.**

<b>Full Convergence Tests</b>		
<b>Panel A. Financial Intermediaries Segment</b>		
V1	Deposit Money Bank vs. Central Bank Assets	-0.708* (-5.385)
V2	Liquid Liabilities	-1.771* (-31.851)
V3	Deposit Money Bank Assets to GDP	-2.343* (-22.735)
V4	Bank Deposits	-2.300* (-20.178)
V5	Financial System Deposits	-1.639* (-26.982)
V6	Private Credit by Deposit Money Banks to GDP	-1.880* (-26.767)
V7	Private Credit by Deposit Money Banks and Other Financial Institutions to GDP	-1.864* (-26.219)
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V8	Overhead Costs	-0.881* (-33.895)
V9	Net Interest Margin	-0.822* (-32.169)
V10	Concentration	-1.087* (-50.453)
<b>Panel B. Insurance Segment</b>		
V11	Life Insurance Penetration	-0.789* (-17.466)
V12	Non-life Insurance Penetration	-0.778* (-10.562)
<b>Panel C. Stock Market Segment</b>		
V13	Stock Market Capitalization to GDP	-2.238* (-27.767)
V14	Stock Market Total Value Traded to GDP	-2.888* (-25.597)
V15	Stock Market Turnover Ratio	-2.986* (-40.954)
<b>Panel D. Bond Market Segment</b>		
V16	Private Bond Market Capitalization to GDP	-1.255* (-17.324)
V17	Public Bond Market Capitalization to GDP	-0.384* (-3.323)

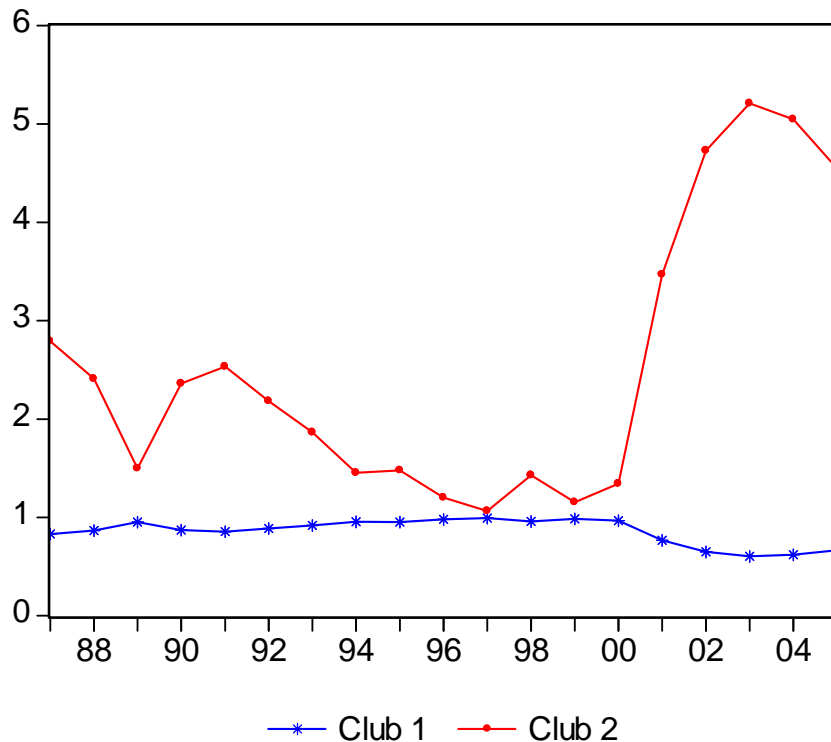
**Notes:**

1. Sample period and countries: See Table 1 for details
2. The Table reports the estimated logt coefficient (t-statistic in parentheses)
3. Asterisks (\*) denote rejection of the full convergence hypothesis at the 5% level.

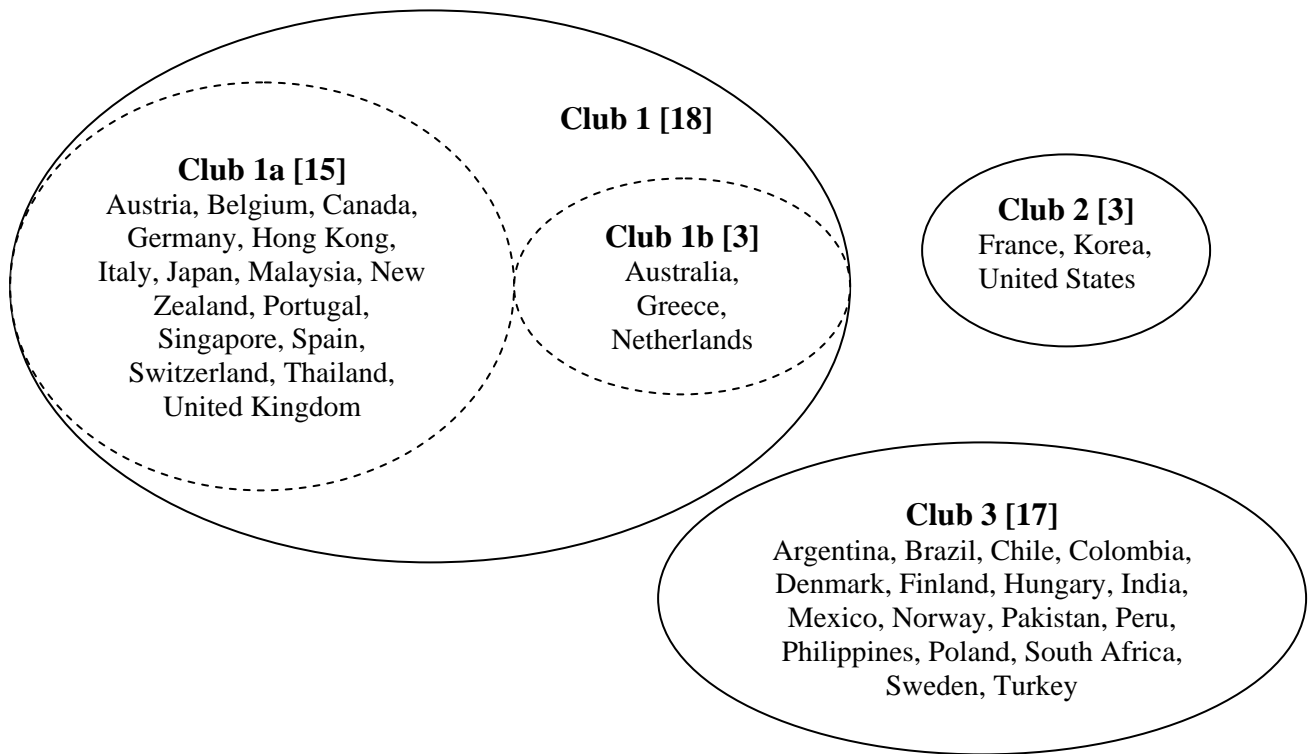
**Figure 1a. Deposit Money Bank vs. Central Bank Assets**



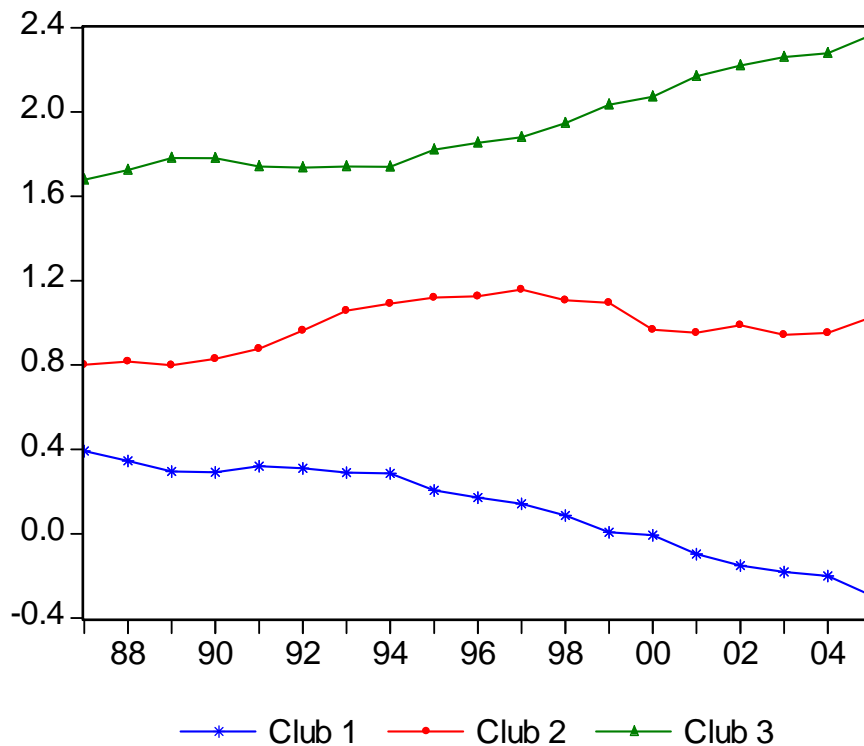
**Figure 1b. Transition Curves - Deposit Money Bank vs. Central Bank Assets**



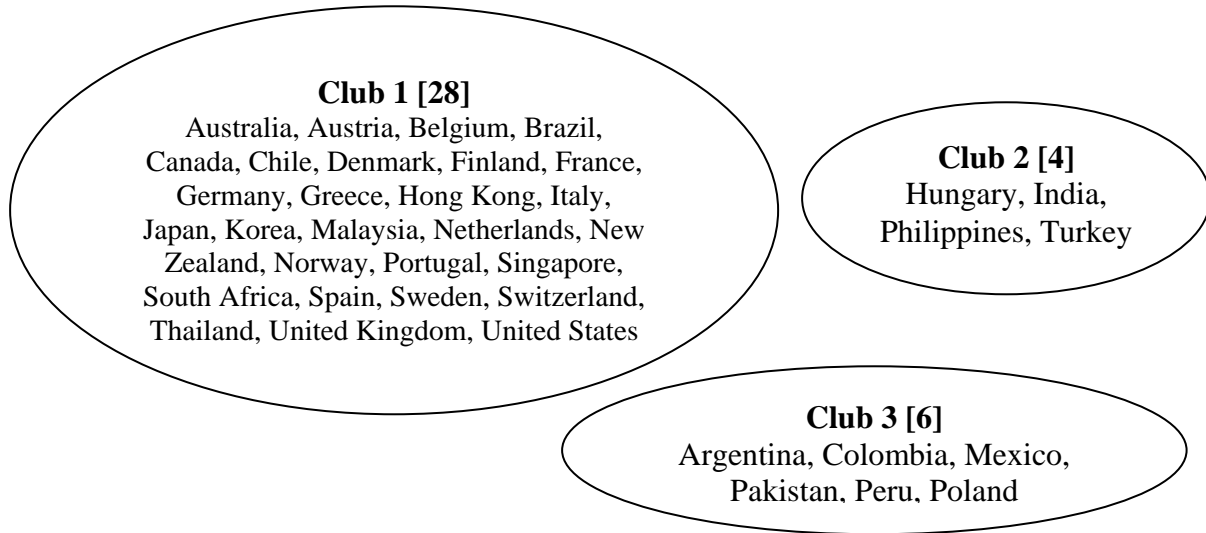
**Figure 2. Liquid Liabilities**



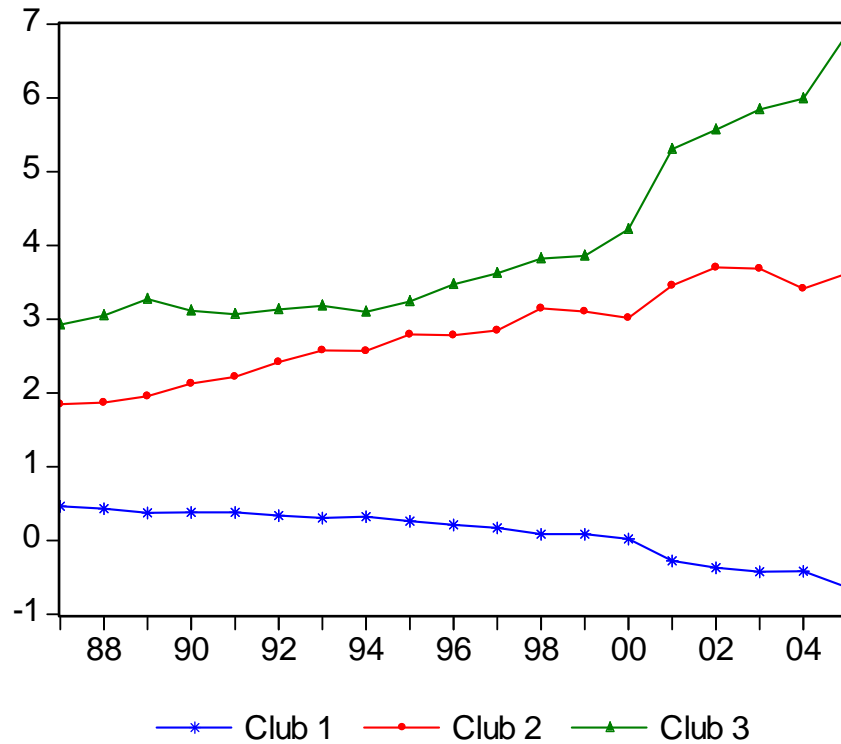
**Figure 2b. Transition Curves - Liquid Liabilities**



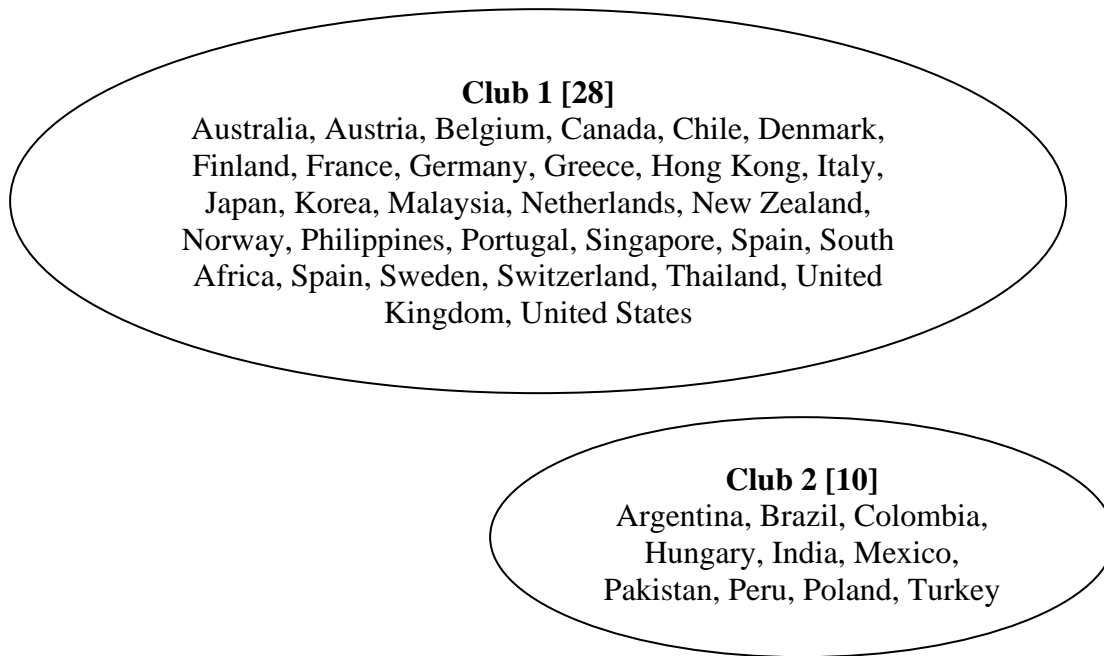
**Figure 3a. Deposit Money Bank Assets to GDP**



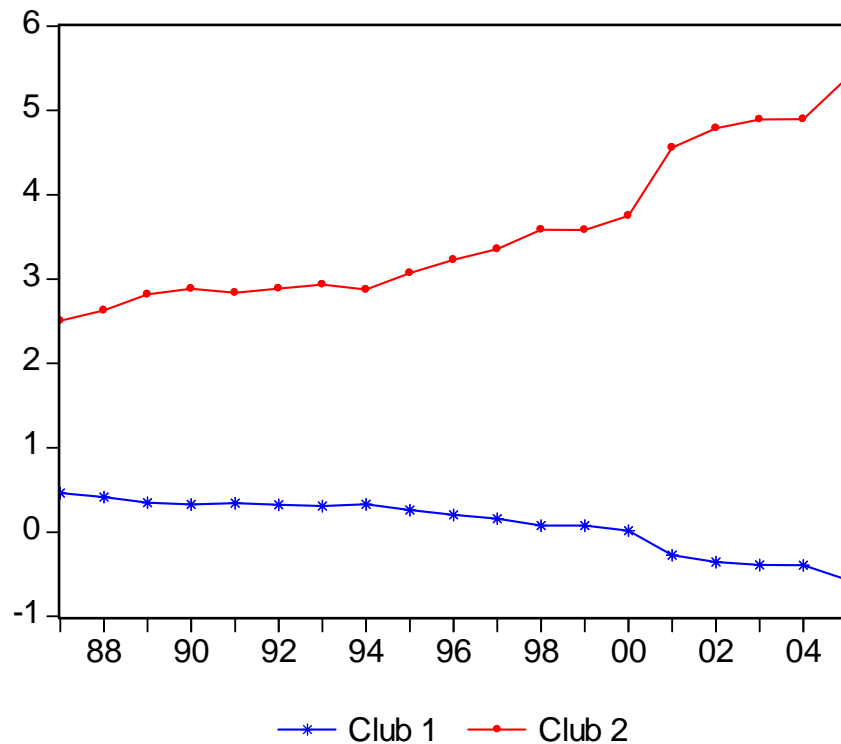
**Figure 3b. Transition Curves - Deposit Money Bank Assets to GDP**



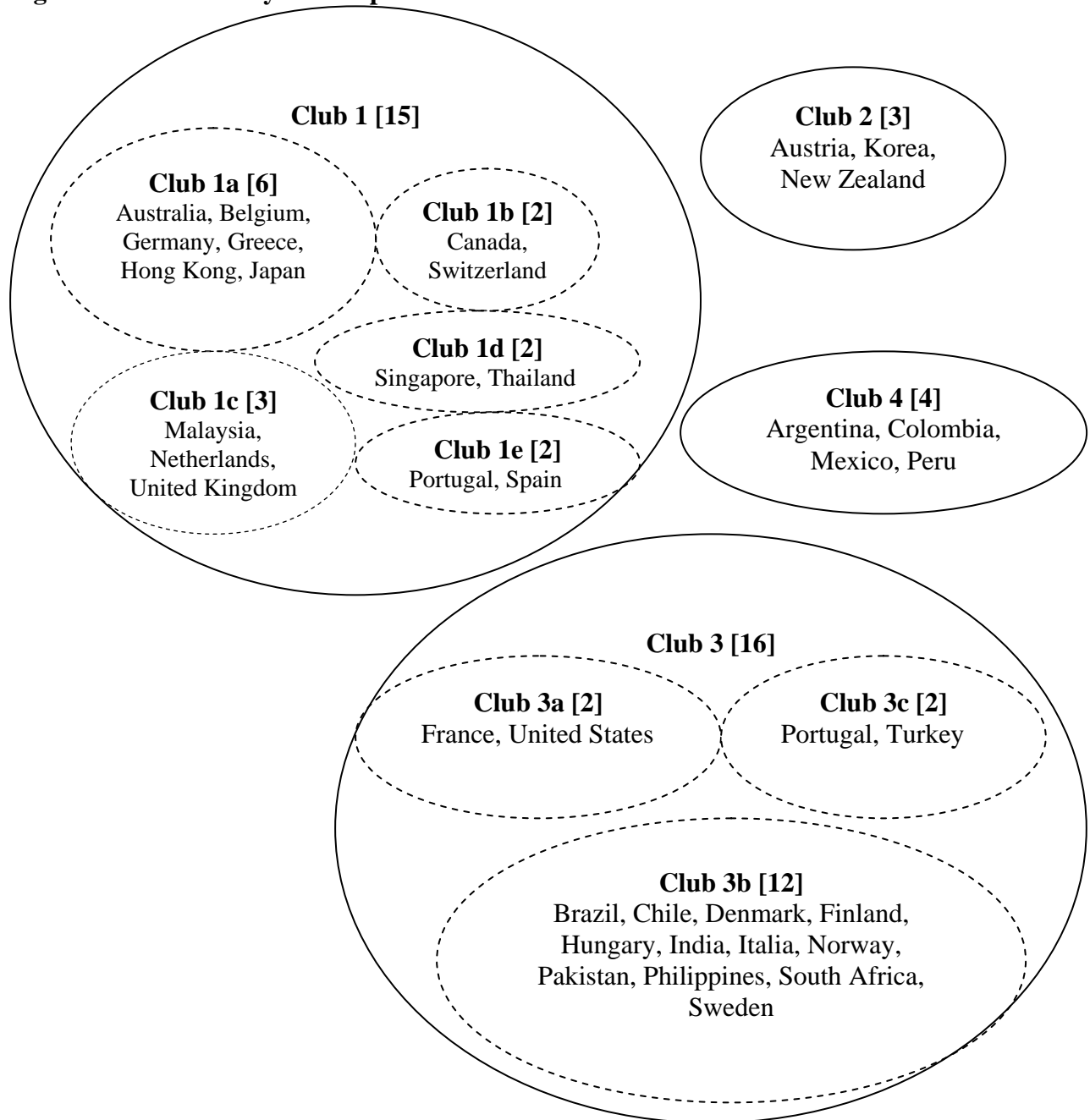
**Figure 4a. Bank Deposits**



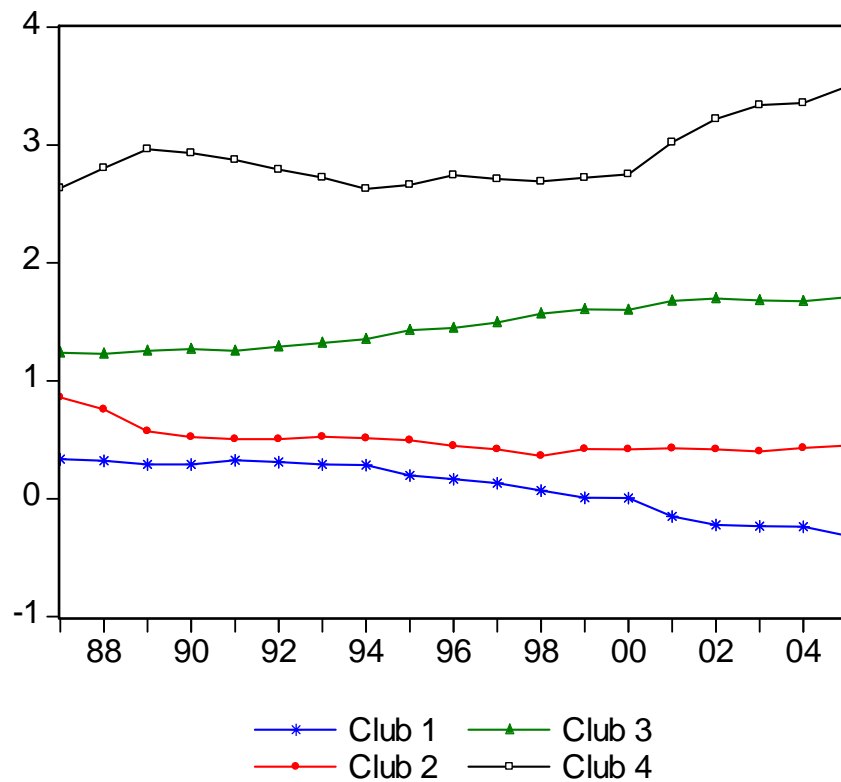
**Figure 4b. Transition Curves - Bank Deposits**



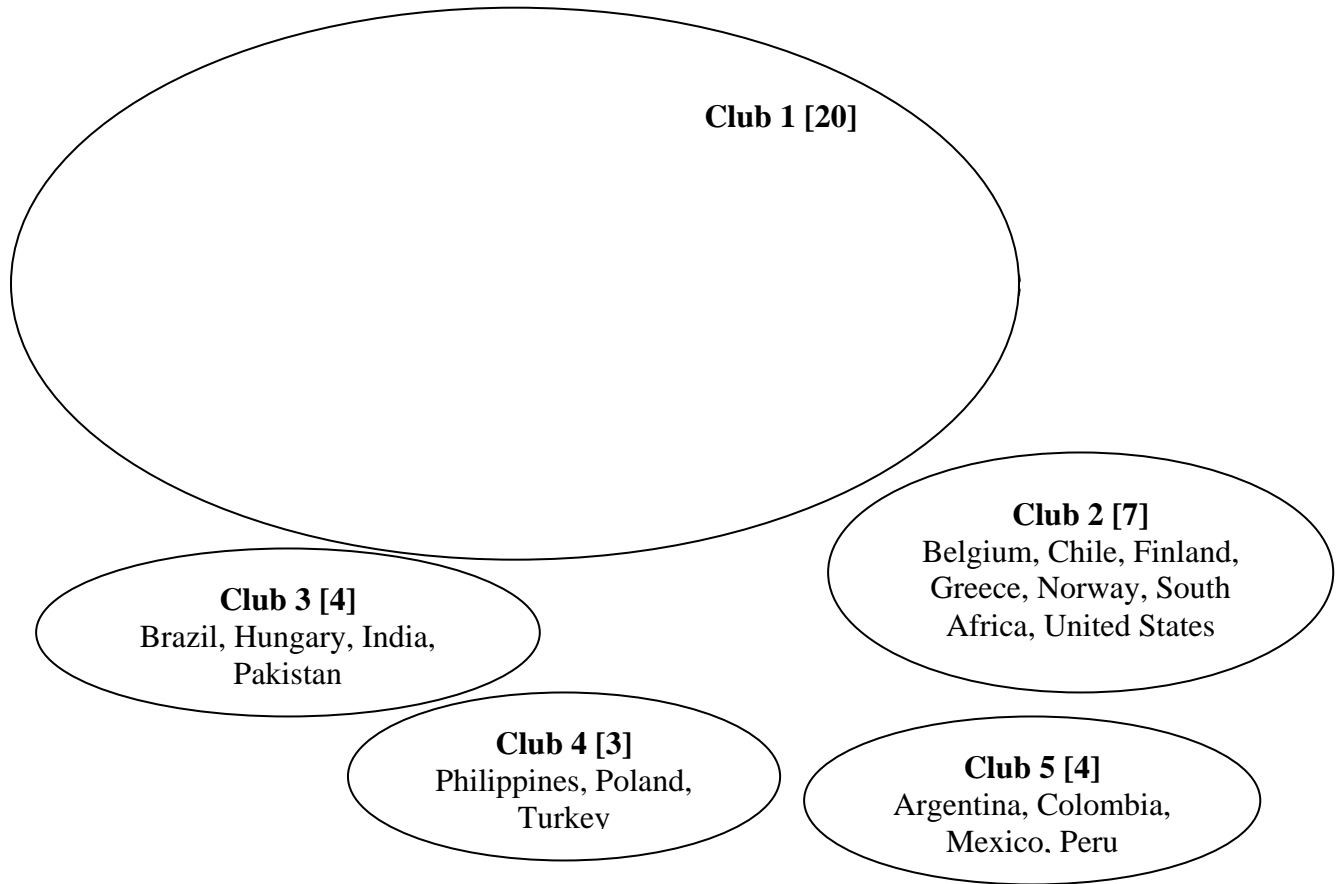
**Figure 5a. Financial System Deposits**



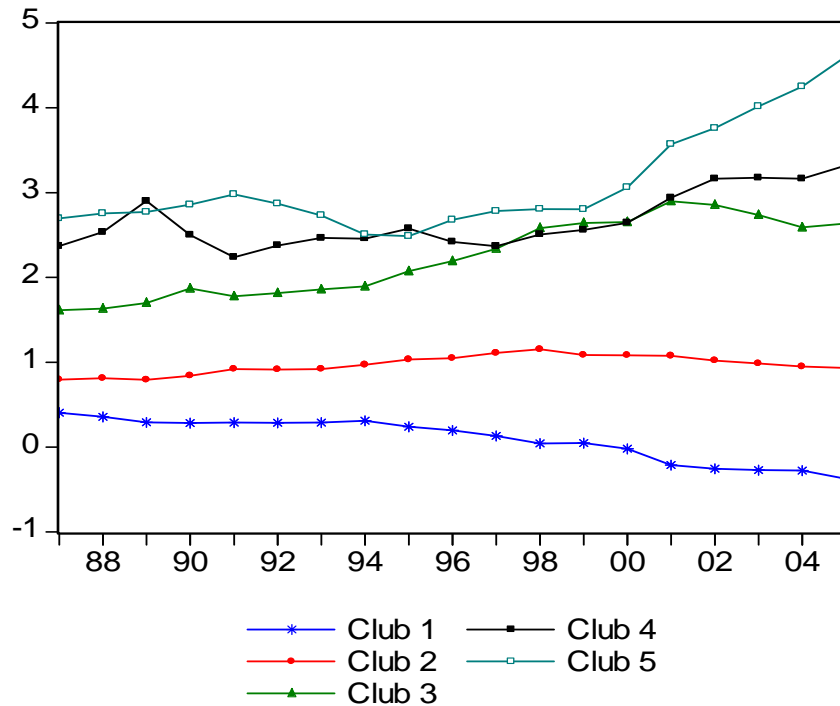
**Figure 5b. Transition Curves - Financial System Deposits**



**Figure 6a. Private Credit by Deposit Money Banks to GDP**

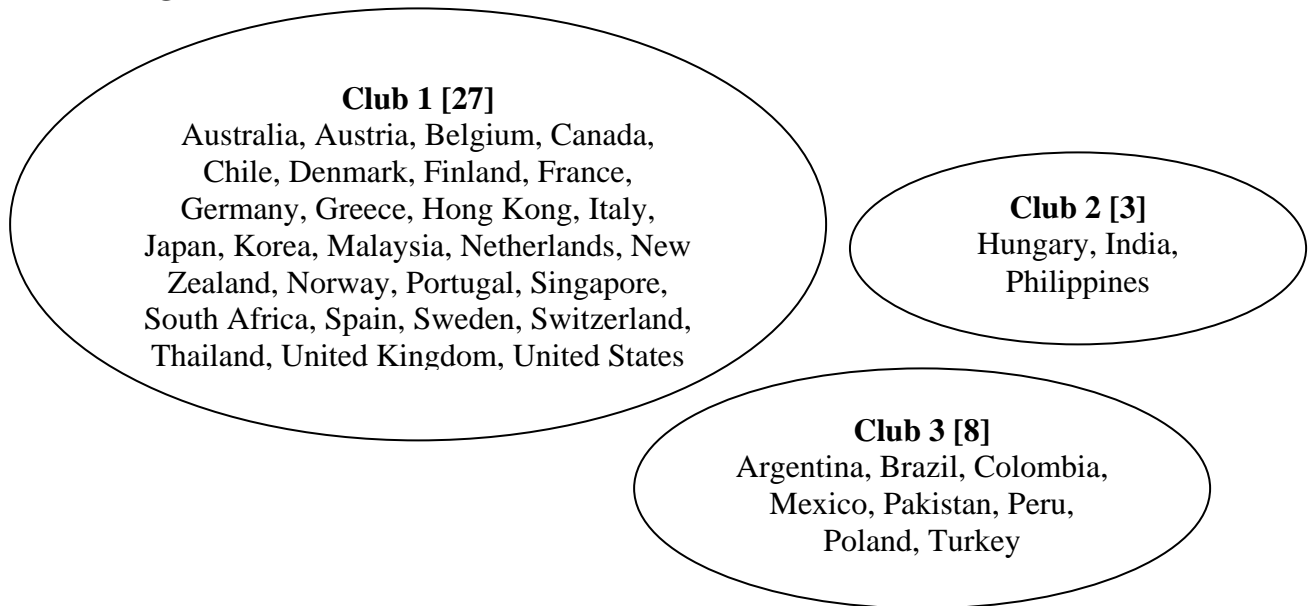


**Figure 6b. Transition Curves - Private Credit by Deposit Money Banks to GDP**

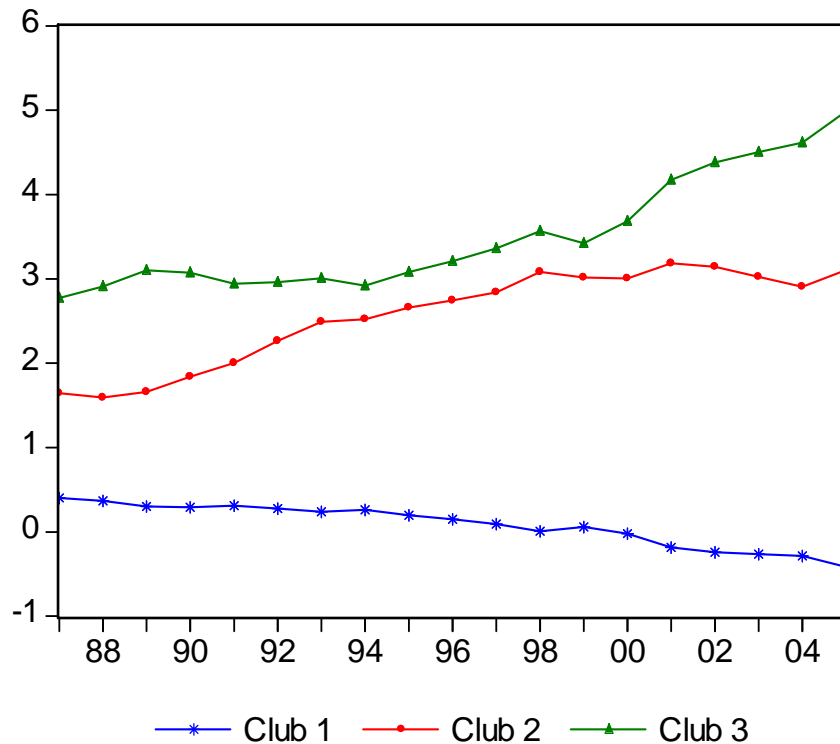




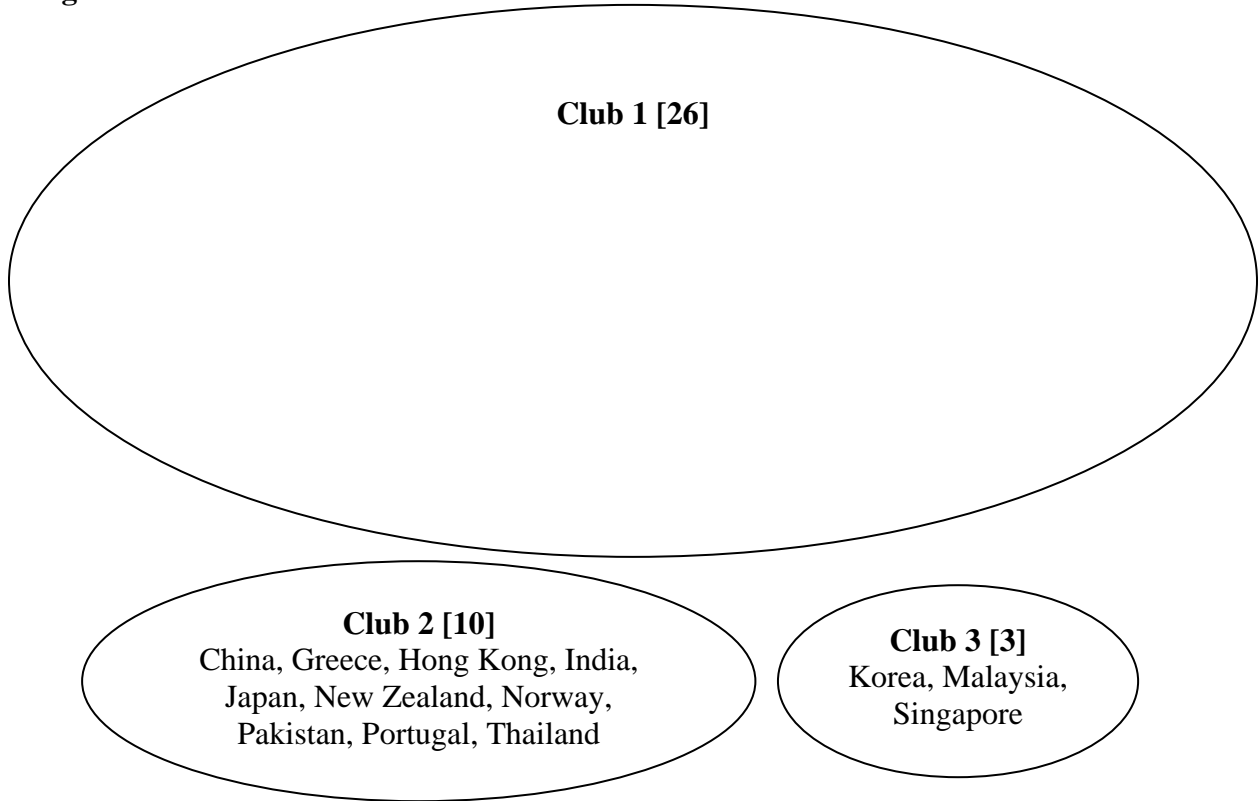
**Figure 7a. Private Credit by Deposit Money Banks and Other Financial Intermediaries to GDP**



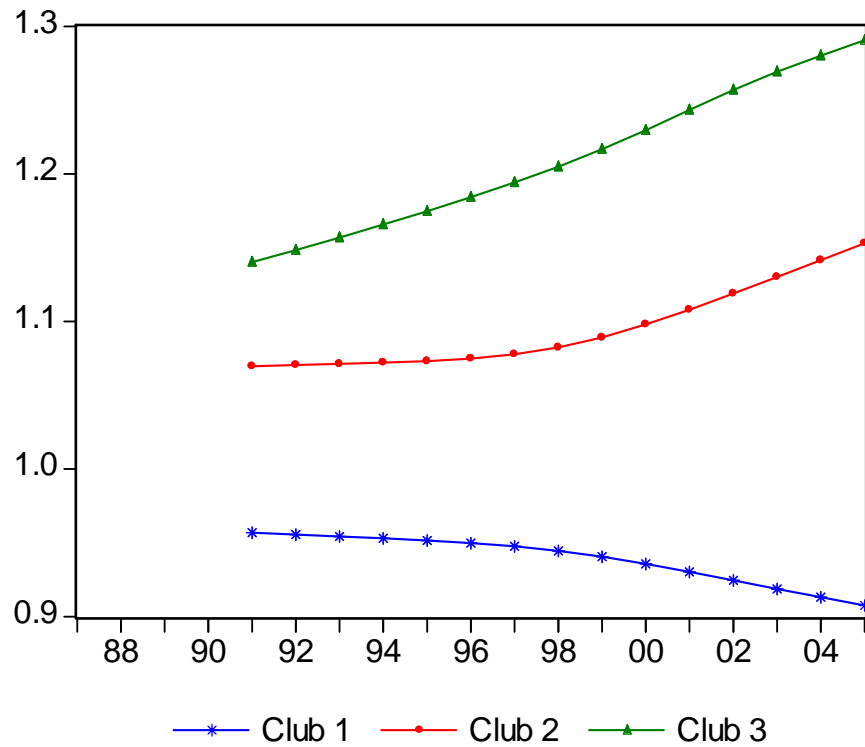
**Figure 7b. Transition Curves - Private Credit by Deposit Money Banks and Other Financial Intermediaries to GDP**



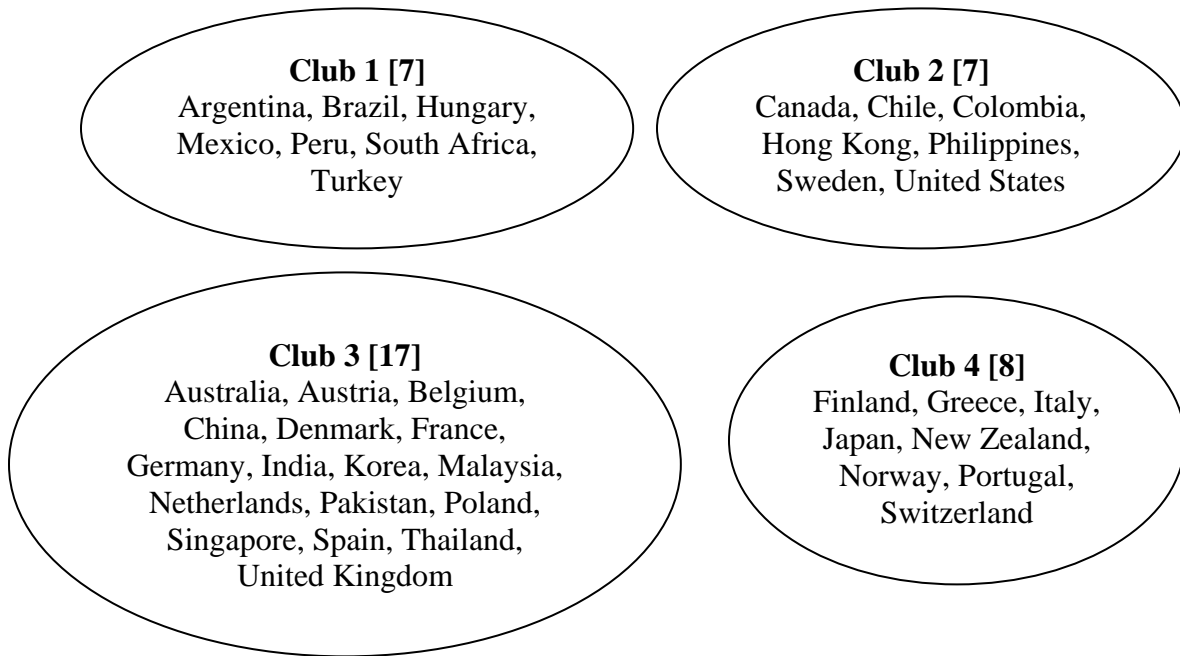
**Figure 8a. Overhead Costs**



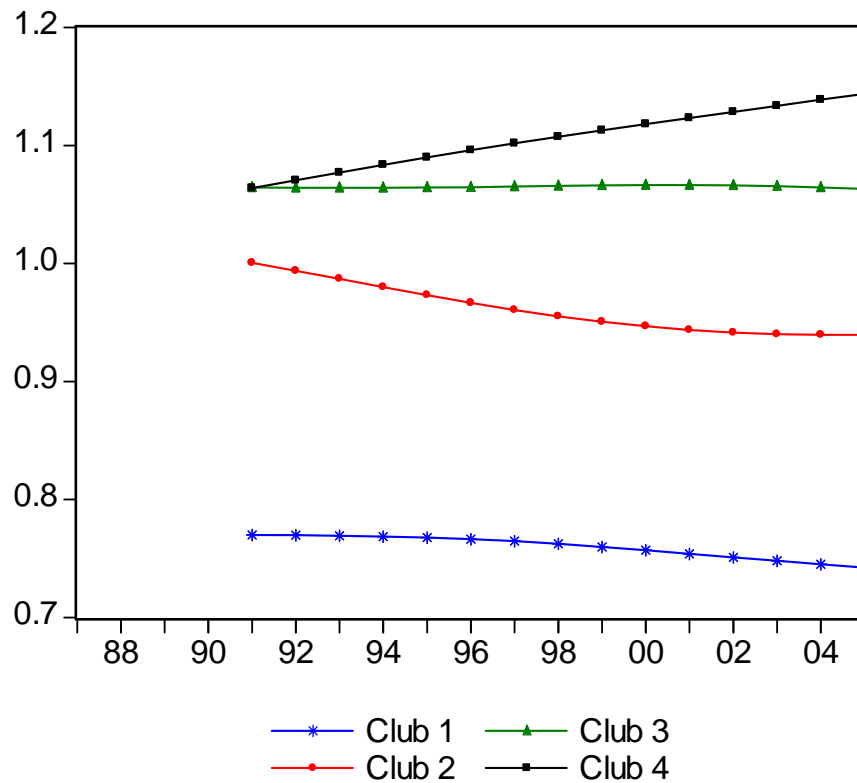
**Figure 8b. Transition Curves - Overhead Costs**



**Figure 9a. Net Interest Margin**



**Figure 9b. Transition Curves - Net Interest Margin**



**Figure 10a. Concentration**

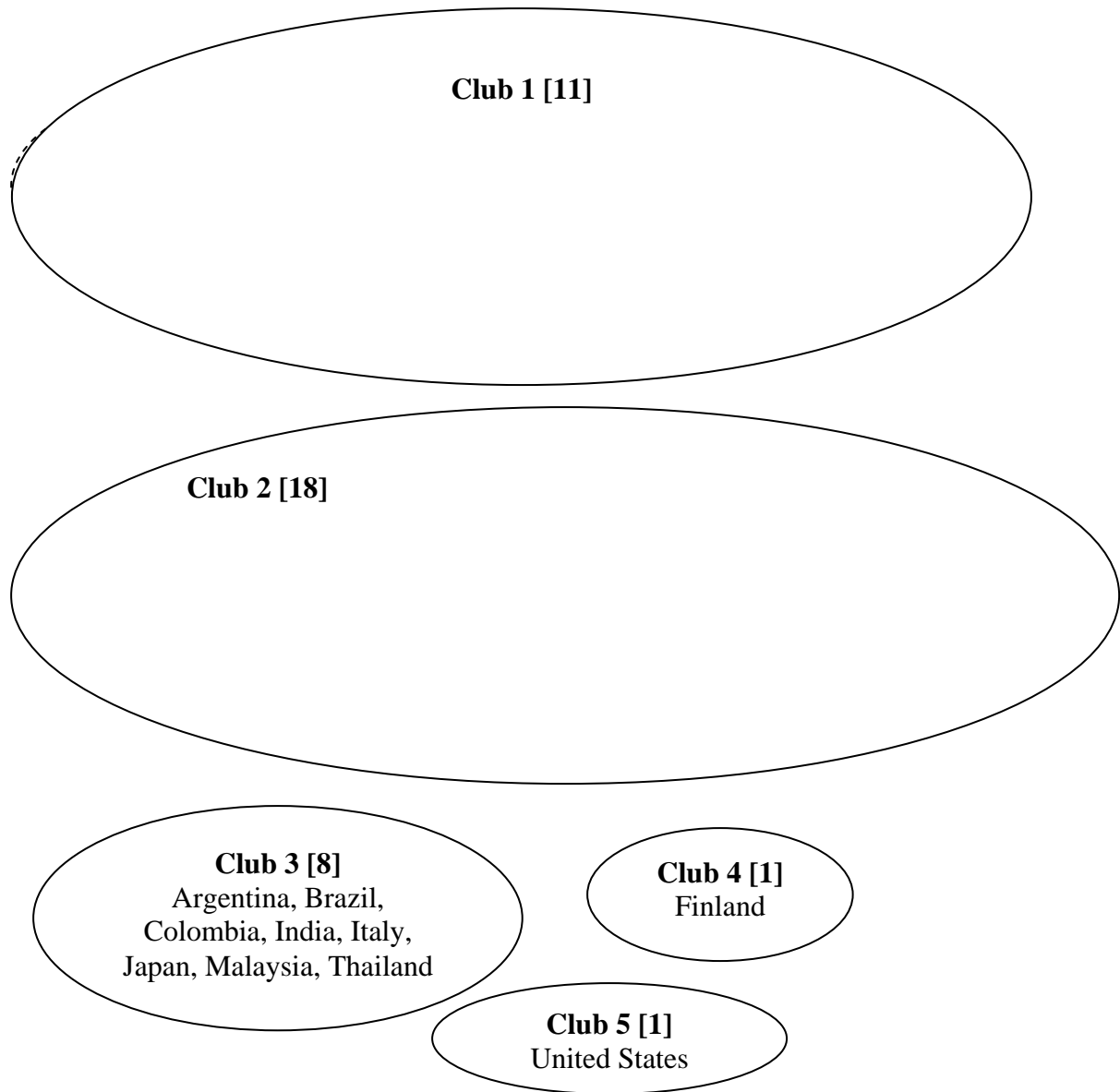
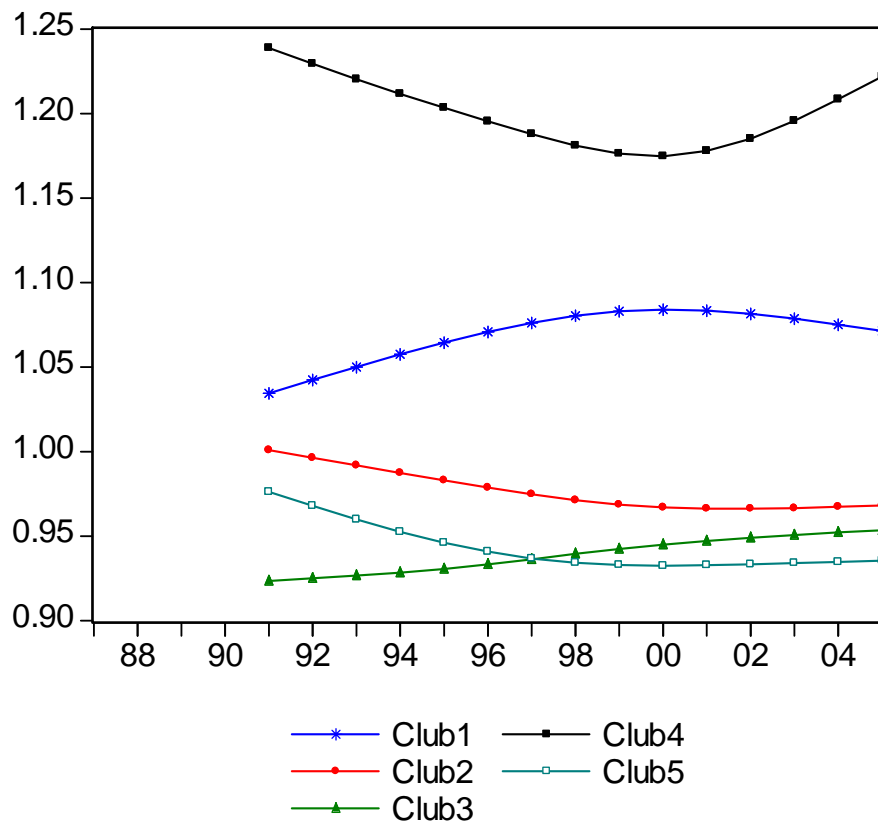


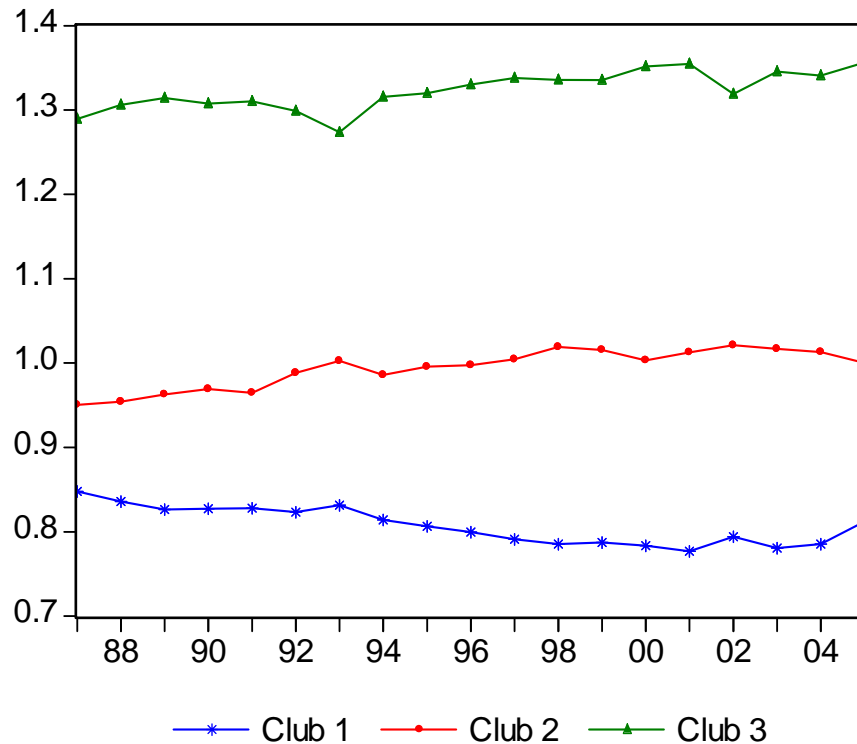
Figure 10b. Transition Curves - Concentration



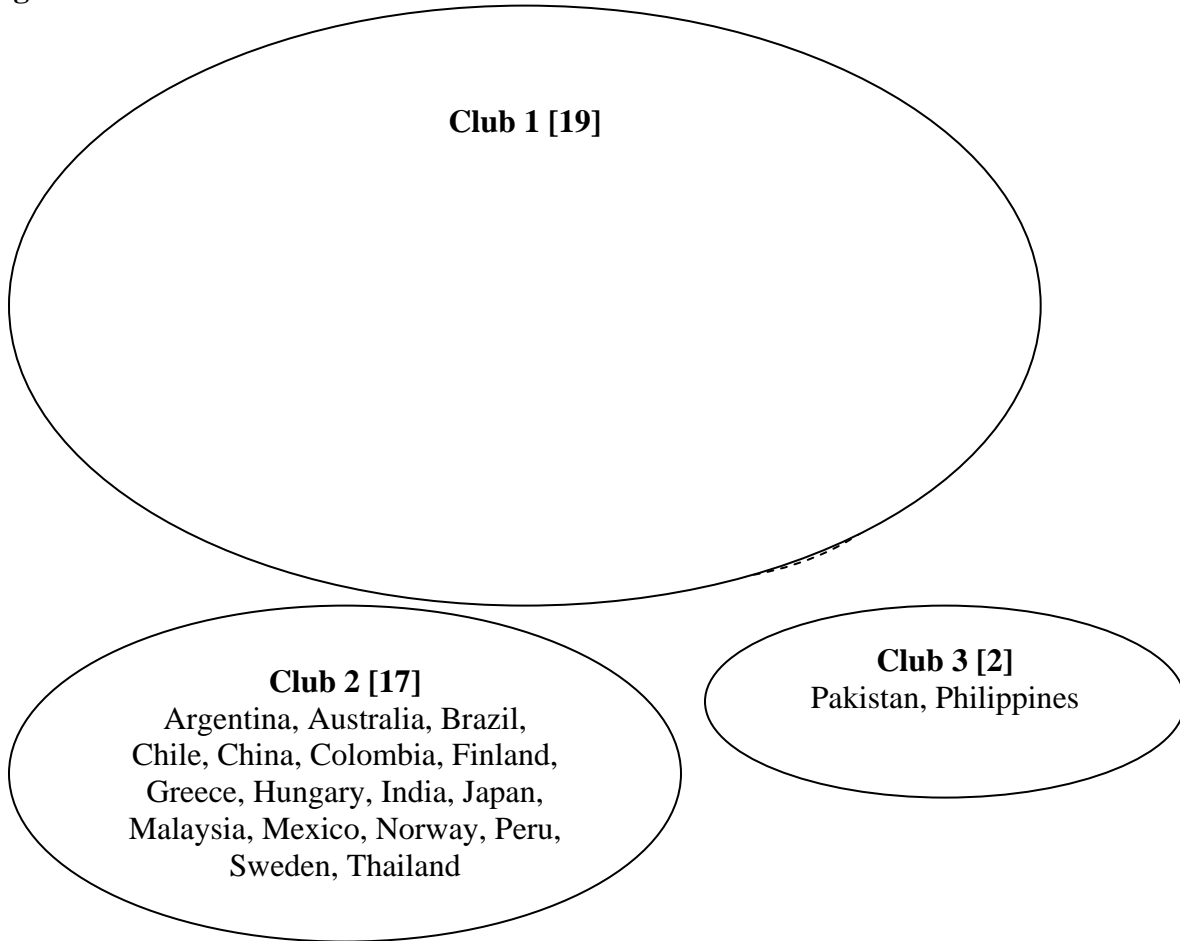
**Figure 11a. Life Insurance Penetration**



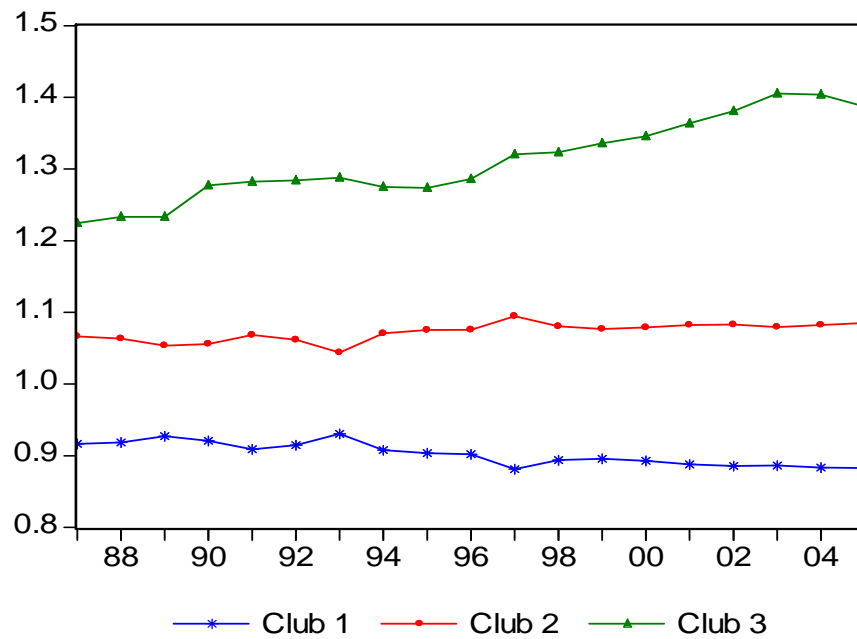
**Figure 11b. Transition Curves - Life Insurance Penetration**



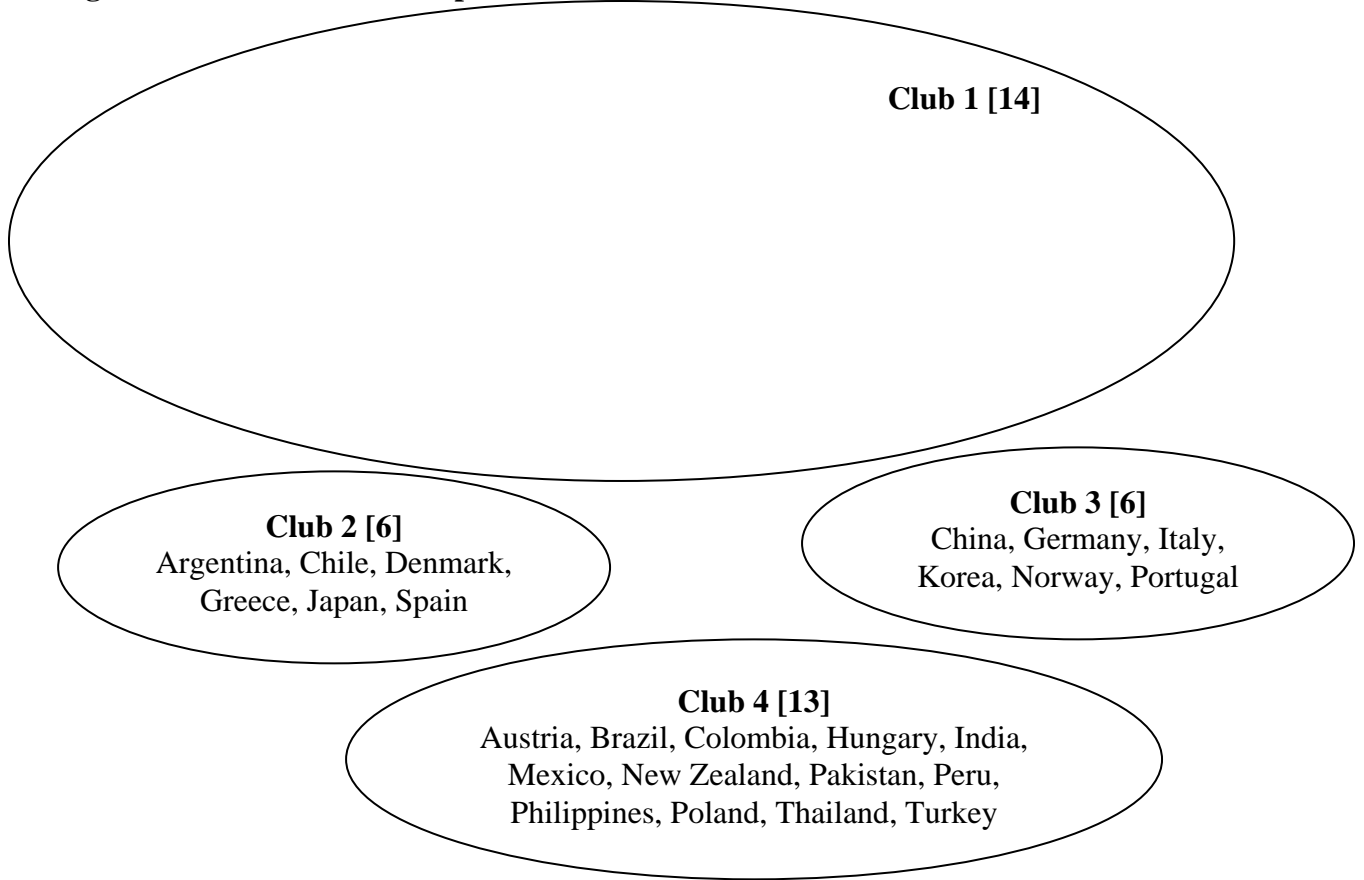
**Figure 12a. Non-Life Insurance Penetration**



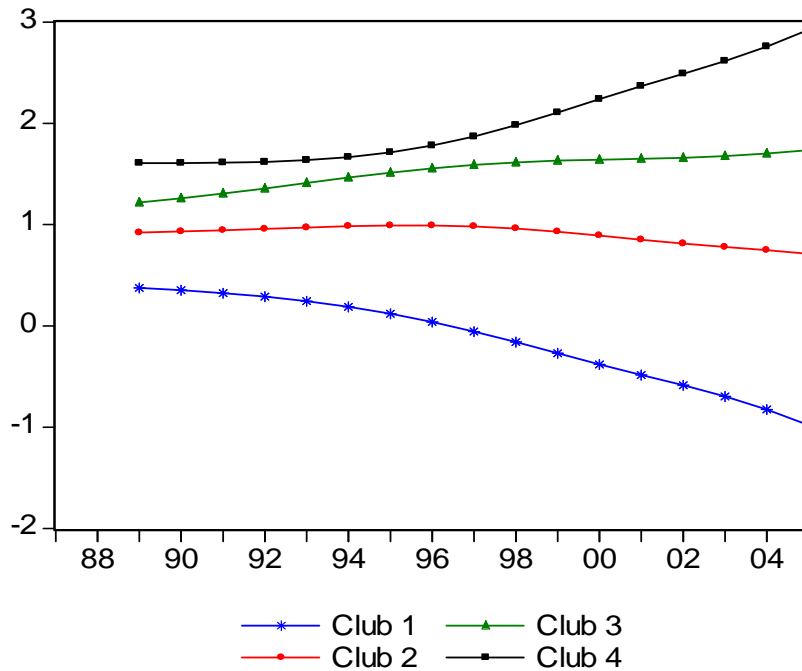
**Figure 12b. Transition Curves -Non-Life Insurance Penetration**



**Figure 13a. Stock Market Capitalization to GDP**

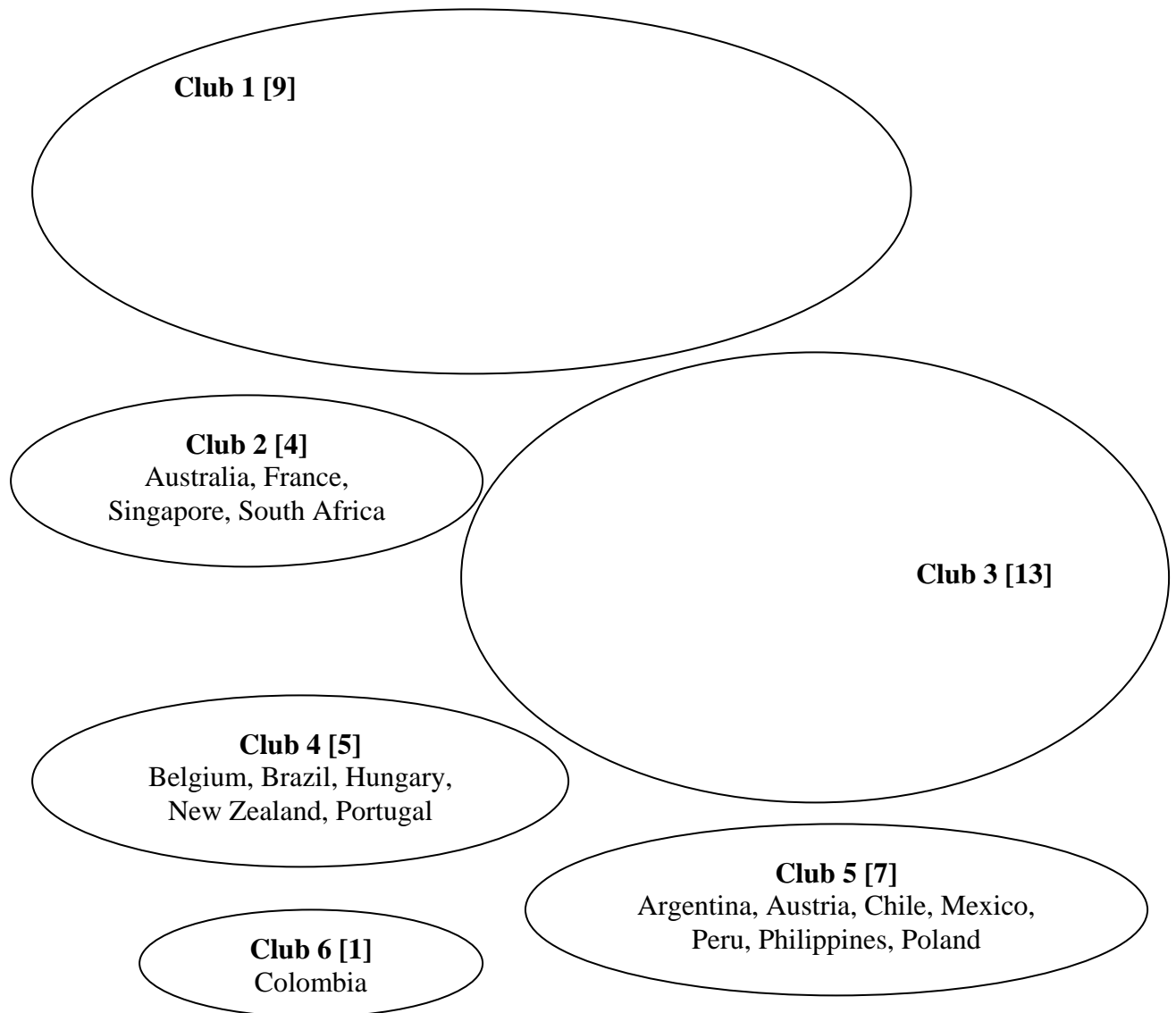


**Figure 13b. Transition Curves - Stock Market Capitalization to GDP**

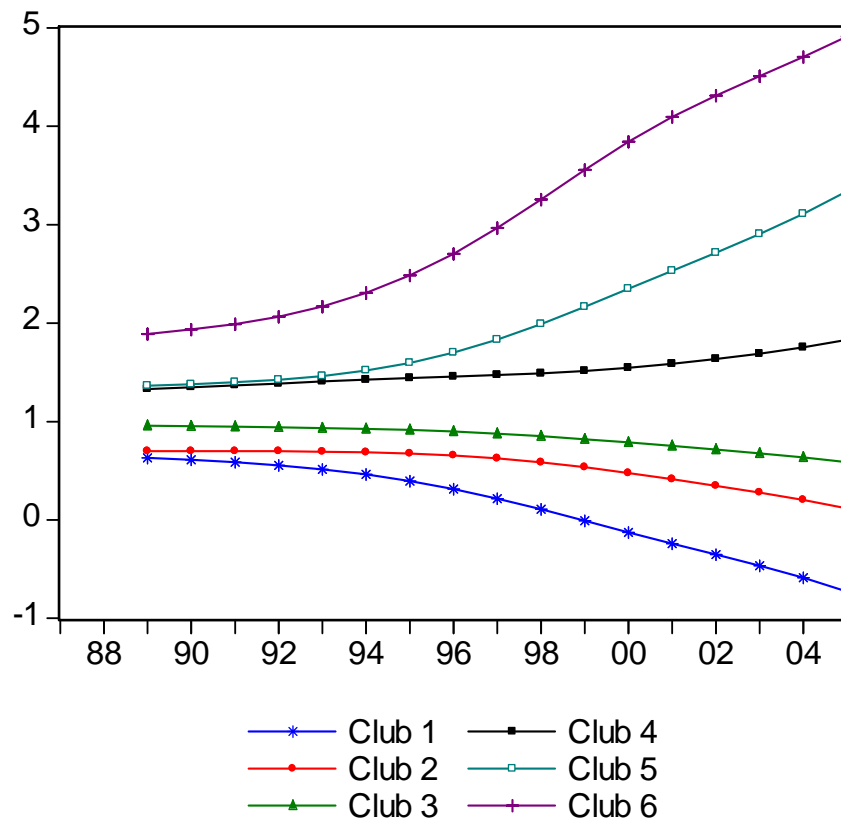




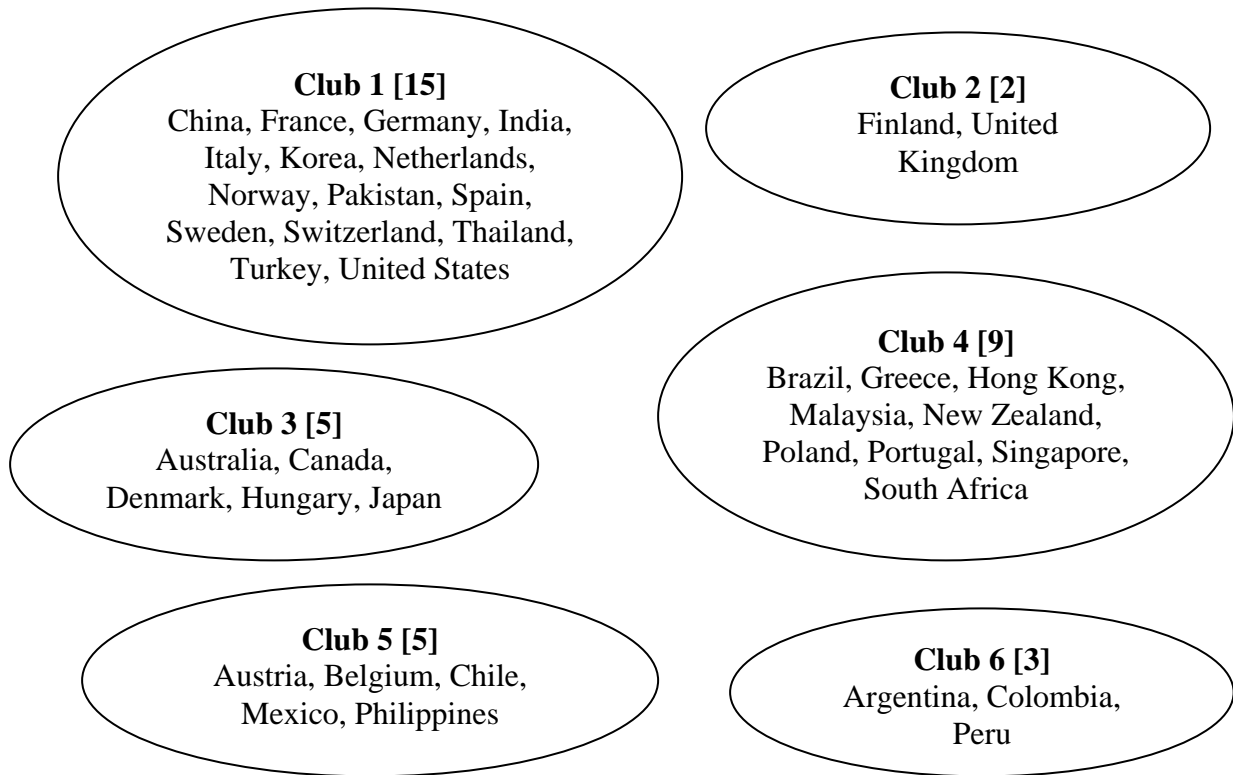
**Figure 14a. Stock Market Total Value Traded to GDP**



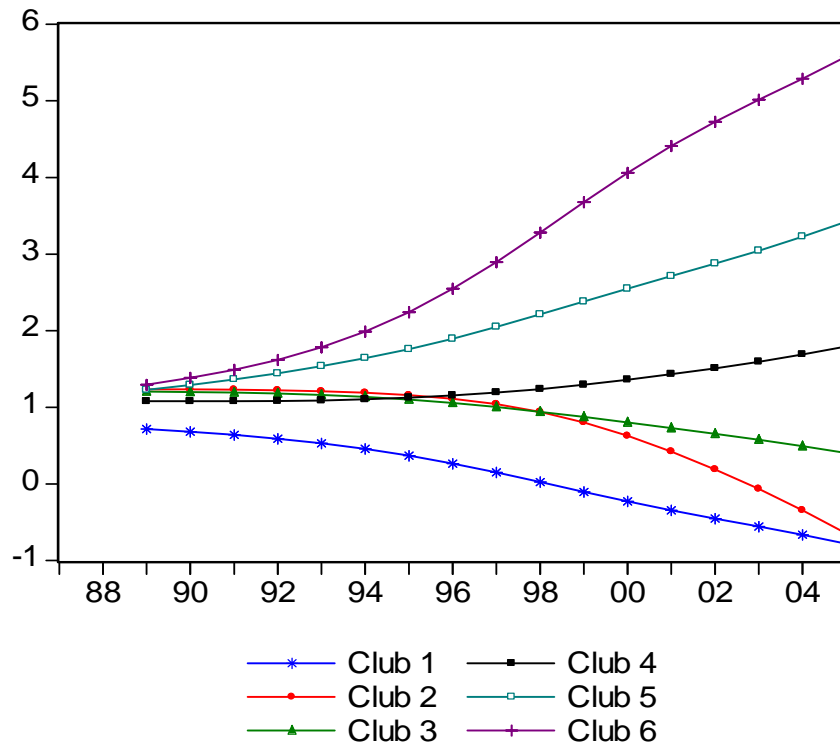
**Figure 14b. Transition Curves - Stock Market Total Value Traded to GDP**



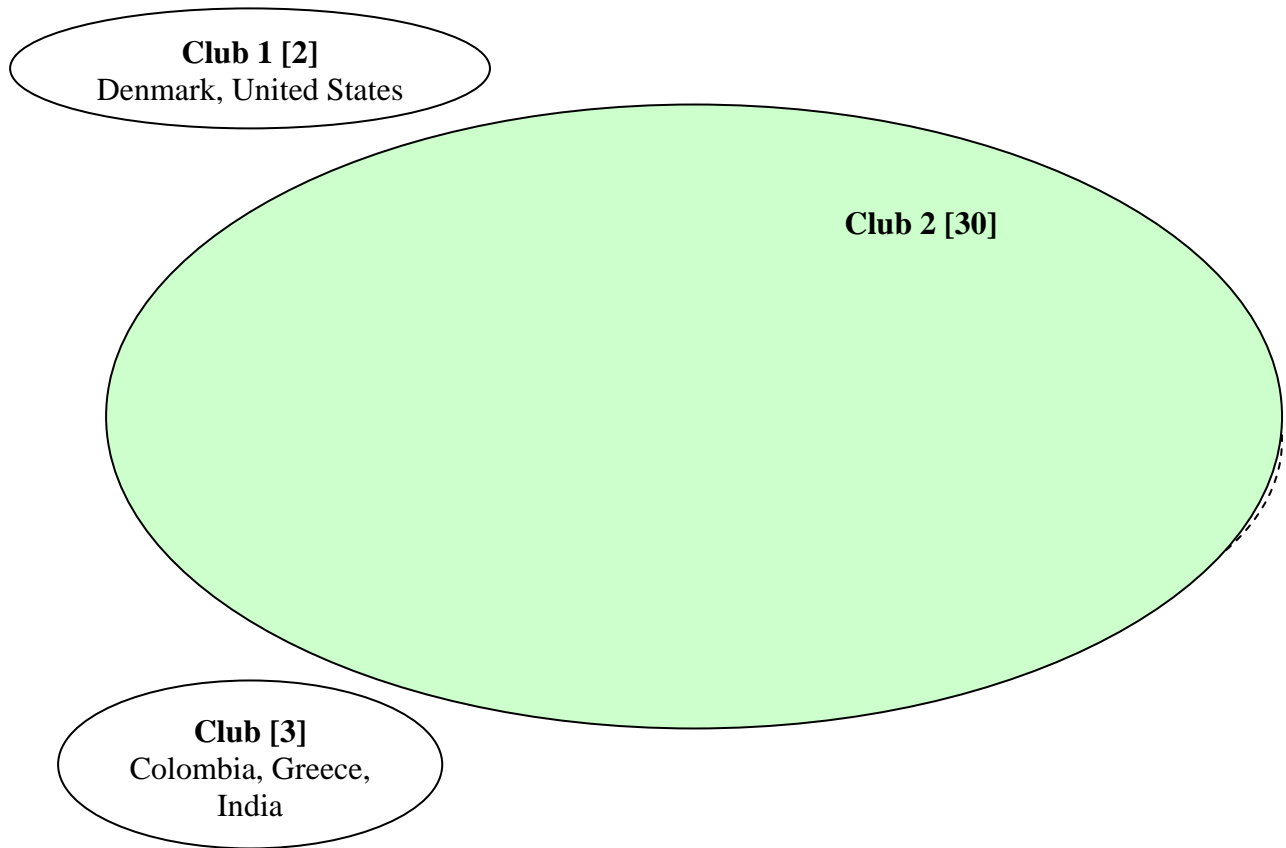
**Figure 15a. Stock Market Turnover Ratio**



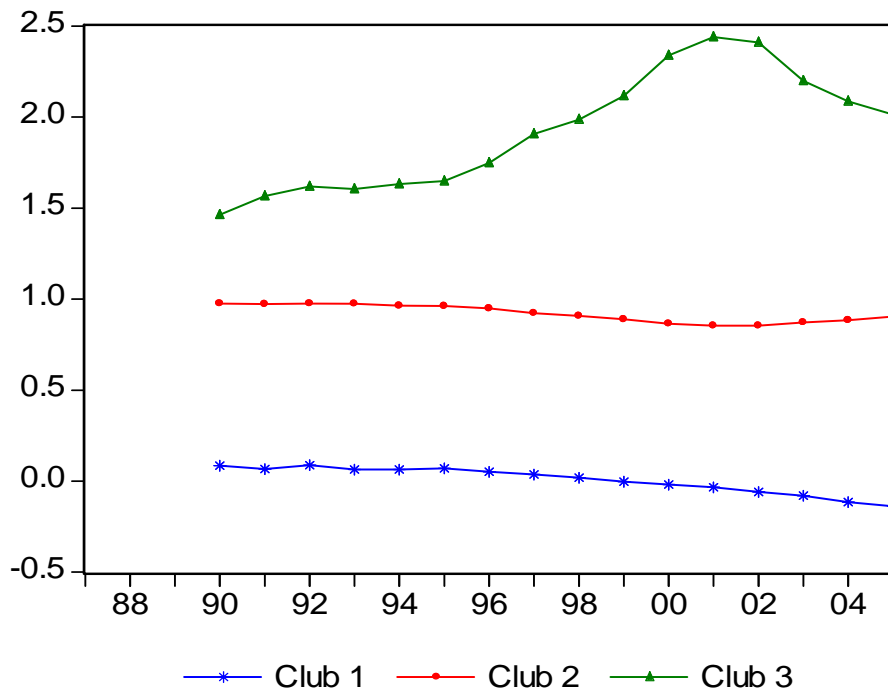
**Figure 15b. Transition Curves - Stock Market Turnover Ratio**



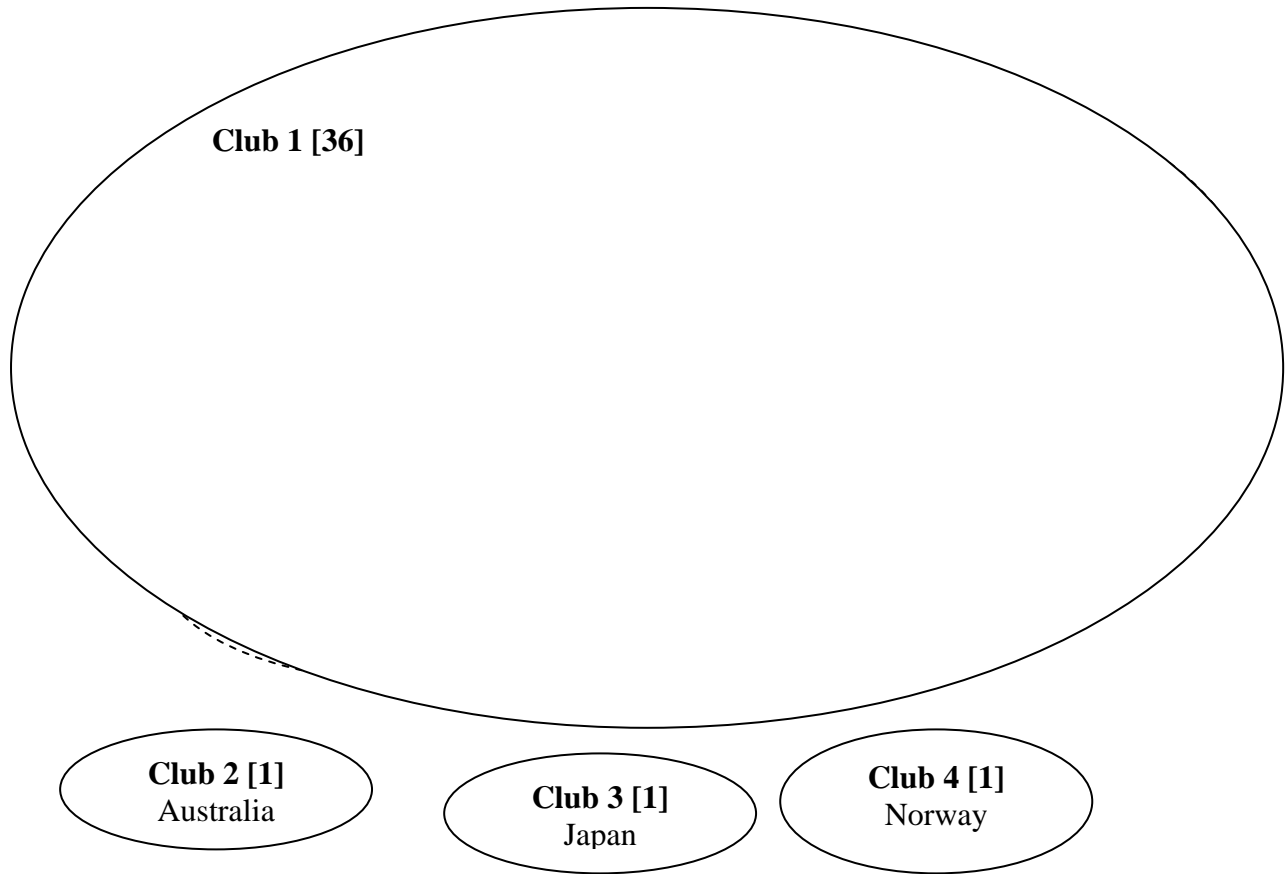
**Figure 16a. Private Bond Market Capitalization to GDP**



**Figure 16b. Transition Curves - Private Bond Market Capitalization to GDP**



**Figure 17a. Public Bond Market Capitalization to GDP**



**Figure 17b. Transition Curves - Public Bond Market Capitalization to GDP**

