A New Era of International Financial Integration: Global, Market, and Regional Factors

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Abstract

This paper analyzes the pattern of international financial integration by studying public and private gross issuance in international bond, equity, and syndicated loan markets of one hundred one countries since 1980. We develop and estimate a non stationary Bayesian dynamic latent factor model with one world factor and three market factors. The four factors account, on average, for about 50 percent of the variance of fluctuations in international issuance, an indication of substantial financial integration. Our results also suggest that Japan, Latin American countries, and the Middle East region stand our with respect to the rest of the world economy by exhibiting largely idiosyncratic patterns of issuance.

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I. Introduction

The 1990s witnessed a dramatic increase in international financial integration, with a variety of measures suggesting that the extent of globalization has even surpassed that observed during the Gold Standard Period. Still, the crises of the late 1990s have fueled concern about a reversal in this trend. In fact, net capital inflows dwindle to a trickle in most of emerging markets in the aftermath of the Asian crisis (although they recover in 2004). But this reversal is not observed in mature economies. Financial integration across industrial countries continues to surge even after the financial market meltdown in late 1998, with large current account deficits in the United States being financed, in large part, by surpluses in other industrial countries. These patterns in international capital flows suggest the onset of somewhat divergent trends in financial integration, with increasing financial linkages in mature economies and lagging integration in developing countries.

Alternative measures of financial integration, however, tell a different story. Interest rate differentials are not persistent even for emerging economies suggesting sophisticated international financial linkages. Perhaps, the evidence provided by net capital inflows presents an incomplete picture of financial integration. While zero net capital inflows may reflect no international financial integration, they may also reflect complete integration with international diversification in which inflows are just offset by outflows. To have a better grasp of integration, one we would like to have an assessment of stocks of foreign assets and liabilities. The IMF reports international investment positions of each country, but only starting from 1997. More sparse data is available for a dozen industrial countries starting in the 1980s.[1] The data on industrial countries indicates that international globalization takes the form of asset swapping by mature economies rather than development flows from rich to poor countries. Unfortunately, the data for emerging economies is so far unavailable to assess the extent of asset swapping across emerging economies or with industrial countries.[2]

Even stocks of international assets and liabilities can only provide a partial measure of integration and do not necessarily capture which countries have more and frequent access to

[1] An important source of net foreign assets for industrial and developing countries is available in Lane and Milesi-Ferretti (2001).

[2] Still, according to Obstfeld and Taylor (2002), the degree of diversification across emerging economies is much less than that of industrial economies and it even seems to be lower than that during the prewar period, with gross debt in emerging markets averaging 11 percent of GDP since 1980 but about 30 percent of GDP during the Gold Standard period.

international markets because large borrowings could be offset by equally large repayments. Market access can be assessed more clearly by looking at gross issuance.

This paper will gauge the extent of financial integration by looking at gross issuance of four financial centers and five regions in three international markets: bonds, equities, and syndicated loans markets from 1980 to 2004. The four financial centers are Germany, Japan, United Kingdom, and United States and the five regions are Asia, Latin America, Middle East and Africa, Transition Economies, and Mature Economies.[3] The five regions capture issuance by eighty-five countries: Asia (14), Latin America (23), Middle East (20), Transition Economies (18), and Mature Economies (22). To our knowledge, this is the first paper to examine issuance in international markets for both industrial and developing countries. Previous research was mostly concentrated on explaining the interest rate spreads at issuance in the international syndicated loan market or in the bond market.[4] In view of the debate on the extent of international financial integration around the globe, we would like to capture whether financial integration is a world phenomenon, or it is just reflects integration in a few regions or group of countries. Since, as it is well known, international financial markets did not take off simultaneously, it is also important to understand the role of various financial instruments (bonds, equities, loans) in the extent of international financial integration. To gauge the relative importance of these factors, we estimate a Bayesian dynamic latent factor model with one global (or world) factor and three "market" factors (one for each market). The model also allows the estimation of idiosyncratic shocks to regions and markets. This technique was developed by Christopher Otrok and Charles Whiteman (1998), who use a Bayesian single dynamic factor model to study coincident and leading economic indicators. This econometric methodology was later extended to a multiple factor setting to examine the extent of comovement in international business cycles in Kose, Otrok and Whiteman (2003). These papers were concerned with common fluctuations of stationary series. We have now extended this methodology to study co-movement in non-stationary series.

Our results indicate that not all regions participate equally in the new era of financial integration. Issuance in international financial markets of Japan and Latin America is dominated by these two regions fundamentals. For example, the booms and busts in international issuance

[3] Of course, we exclude the four financial centers from the mature economies group.
[4] See, for example, Ashoka Moody and Barry Eichengreen (1998).

of Latin America in the 1990s were more pronounced that those observed in international issuance of other regions. Our results also indicate that issuance in the international equity market followed different dynamics from those in the bond and syndicated loan markets.

The rest of the paper is organized as follows. Section II examines the data, Section III presents a brief history of the development of the international bond, equity, and loan markets. Section IV presents the model. Section V discusses the model estimates. Section VI links country-specific fluctuations in issuance to idiosyncratic economic fundamentals. Section VI discusses the conclusions.

II. The Data

This paper examines access to international capital markets for both mature and emerging markets. To do that, we focus on gross issuance in international bond, equity, and syndicated-loan markets. The data we use is obtained by Dealogic, who compiles information on issuance (at the security level) in international bond, equity, and syndicated loan markets. The database starts in 1980 (1983 for equity issuance) and it covers issuance by over 110 countries. For the bond and the syndicated loan markets, the database includes borrowing by the private sector and the government. We now describe in more detail each of the markets.

Bonds

The database on bond issues starts in 1980. Initially, the database only covered international issues. More recently, Dealogic started to compile information on issuance in domestic markets, but the data on domestic issues still does not cover many countries. The information on each issue is quite detailed. For each issue, there is information on the amount of funds raised and the dates of announcement and maturity of bond as well as information on the name of the issuer, the sector of the immediate borrower (issuer), the sector of the ultimate borrower (parent company of the borrower or guarantor), country of residence and nationality of the issuer. The database also provides information on the issue type (fixed rate, floating rate, zero-coupon bond), the legal jurisdiction under which the bond is issued, and a variety of other characteristics, such as, whether the bond returns are linked to inflation or output, or whether

they are asset-backed. There is also information on the ratings of individual issues at the time of issuance.

From this database we only extract the information on international bonds. Our definition of international securities follows that of the BIS, who classifies bonds as international according to the location of the transaction, the currency of issuance, and the residence of the issuer. According to this classification, international issues comprise all foreign currency issues by residents and non-residents in a given country and all domestic currency issues launched in the domestic market by non-residents. In addition, domestic currency issues launched in the domestic market by residents are also considered as international issues if they are specifically targeted at non-resident investors. This definition covers Euro market offerings,[5] global bonds,[6] and foreign offerings, which include Samurai and Yankee bonds and more generally are those bonds issued by foreign residents in domestic bond markets.[7]

Equities

The database on equities provides detailed information on the amount of funds raised and the dates of announcement and completion of deals; the name and business sector of the issuer; the country of residence and nationality of the issuer; the type of issue (ADRs, initial public offering, privatization, etc); the type of offer (primary or secondary); and the market of issue. There are different types of placements in the database: (1) Issuance of common or preferred equity in the international market, (2) Issuance targeted at a particular foreign market, (3) Registered stocks traded on foreign markets as domestic instruments (for example ADRs), (4) Issuance by residents in the domestic markets. We include the first three types of offerings in our international equity group.

[5] Eurobonds are bonds issued and sold outside the country of the currency in which they are denominated (for example dollar-denominated bonds issued in Europe or Asia).

[6] Global bonds are single offerings structured to allow simultaneous placement in major markets: Euro, US, and Asia.

[7] Foreign bonds are bonds issued by firms and governments outside of the issuer's country, usually denominated in the currency of the country in which they are issued. Samurai bonds are yen-denominated bonds issued in Tokyo by a non-Japanese company. Similarly, Yankee bonds are bonds denominated in U.S. dollars and issued in the United States by foreign banks and corporations.

Syndicated Loans[8]

Syndicated loans are credits granted by a group of banks to a borrower. In a syndicated loan, two or more banks jointly agree to make a loan to a borrower. There is a single contract, still every syndicate member has a separate claim on the debtor. The creditor banks can be divided into two groups. The senior group consists of banks acting as mandated arrangers, arrangers, lead managers or agents. These senior banks are appointed by the borrower to bring together the syndicate of banks prepared to lend money at the terms specified by the loan. The syndicate is formed around the arrangers who retain a portion of the loan and look for junior participants. The junior banks (managers and participants) constitute the second group of creditors. The number of participants varies according to the size, complexity, and pricing of the loan. All participating banks have earnings based on a spread over a floating rate benchmark (typically Libor) on the portion of the loan that is drawn. Senior banks also have earnings related to various fees. The arranger and other members of the lead management team generally earn some form of upfront fee in exchange for putting the deal together while the underwriters earn an underwriting fee for guaranteeing the availability of fund. Other somewhat senior participants may also receive a participation fee for agreeing to join the facility, with the actual size of the fee generally varying with the size of the commitment. As discussed in Gadanecz (2004), syndicates allow creditor banks to diversify their risk with other financial institutions without the disclosure and marketing burden that bond issuers face. For the smaller banks in the syndicates, the participation in a syndicated loan allows them to participate in markets that otherwise they would not be able to access. For more senior banks, the participation in a syndicate allows them to diversify their sources of income since they also earn various types of fees for putting together the loan.

We are only interested in international syndicated loans. We follow the BIS classification to identify international loans. These loans include all loans granted by syndicates consisting of at least two financial institutions with the nationality of at least one of the syndicate banks being different from that of the borrower. The facilities included in our data consist of term loans, revolving credits, co-financing facilities, export credit bridge facilities, construction loans, mezzanine loans, or multiple options facilities.

[8] The description of syndicated loans is based on Gadanecz (2004).

III. A Brief History of Market Development

Figure 1 shows total issuance in international bond, equity, and syndicated-loan markets. The evidence from this figure indicates that international financial integration exploded in the last two decades as measured by gross issuance in international markets, with issuance increasing about 100 times in the bond and equity markets and 30 times for the syndicated loan market (starting at higher level of development in 1980).

Figures 2 and 3 explore whether international financial integration was indeed a global feature. Figure 2 shows international issuance separately for OECD countries and for emerging economies, while Figure 3 tallies issuance in six regions. Still, Figures 1-3 do not provide a complete picture of market access since they obscure the degree of integration of smaller countries with lower levels of issuance. To capture the degree of market access of small and large countries, Figure 4 also reports the proportion of countries with issuance in the six regions.

International capital markets languish in the aftermath of the crises in the 1930s, only to recover towards the end of the 20th century. The origins of the financial developments of the 1980s and 1990s can be traced to two market developments in the late 1950s and 1960s. In 1957, the British government introduces new financial restrictions in the vain attempt to stop the speculation against the pound. In the end the devaluation is not averted, but the restrictions make London-based banks create a new market to avoid losing their share of financial transactions: Banks' dollar deposits start to be used to provide dollar loans in an unregulated market, which becomes to be known as the Eurodollar market. Other events further up the liquidity of this market: The first is the Cuban crisis, with Russian banks moving their dollar reserves from the United States to London. The second event is also the product of another defense of the domestic currency against speculative attacks. This time the currency under attack is the US dollar, with the US government, as the British government did in 1957, introducing capital account controls in 1964.[9] US based-banks, like their British counterpart in the 1950s, turn to the Eurodollar market to avoid the restrictions that could imperil their operations.

[9] In September 1964, the United States Congress enacted the Interest Equalization Tax (IET), an excise tax on purchases of new or outstanding foreign stocks and bonds by U.S. residents, which lowered the rate of return to U.S. purchasers of foreign assets by an equivalent of 1 percentage point.

But perhaps, the straw that broke the camel's back is the collapse of the Bretton Woods system in 1973. With no need to defend the peg, countries can choose their own monetary policy without the need to restrict capital mobility and thus a new era of financial liberalization begins. As early as July 1973, United States eliminates capital account restrictions. The liberalization process also involved other industrial countries, with Germany and Great Britain partially eliminating capital controls in 1973 and Japan joining the group in 1979. In the late 1970s, Latin American countries join with deregulations of the capital account and the domestic financial sector.

The first international market to develop in the 1970s is the syndicated loan market, particularly with lending to emerging markets. The dramatic surge in international loans is triggered by the oil shock in 1973-74, with the high savings of OPEC countries being channeled through the Eurodollar market particularly during the 1979-81 period. As shown in Figure 3, loans are issued to the developing countries in Asia, the Middle East and Africa, and especially Latin America. The boom in syndicated lending to emerging markets peaks at 57 billion dollars in 1982. Mexico's default in August 1982 triggers an abrupt halt in lending, with the syndicated loan issuance declining by 50 percent. With banks recalling their loans from all emerging markets, other defaults follow. Most of Latin American countries suspend interest and principal payments and they are also followed by countries in Asia, Eastern Europe, and Africa. The rest of the 1980s witness a collapse of the international syndicated loan market to emerging economies: Gross issuance of syndicated loans remained at half of the issuance reached in the early 1980s. The collapse in Latin America is even more dramatic, with loan issuance at 4 percent of the level reached in 1982.

By the mid 1980s, emerging markets are replaced by European countries in international capital markets. It is in the 1980s that the wave of international financial liberalization also embraces European countries as they move towards the European Monetary System.[10] Their participation in the international bond market increases more than 10-fold from 6 billions of dollars in 1980 to 72 billions of dollars in 1989.

[10] See Kaminsky and Schmukler (2003) for a chronology of financial liberalization in industrial and emerging countries.

By the end of the 1980s, a new development ends with the isolation of developing markets from international capital markets: The Brady plan[11] and its initiative to restructure defaulted loans into bonds collateralized by US treasuries in 1989[12] create, almost overnight, a market for sovereign emerging market bonds. As investor confidence in emerging markets countries starts to recover gradually, both the government and the private sector start issuing bonds in international capital markets. Latin America benefited especially from the new international bond market. In fact, issuance in the bond market surpassed that of the syndicated loan market, with Latin American countries bond issuance increasing from 1.5 billions of dollars in 1990 to 58 billions of dollars in 1997.

The Brady plan, with its initiative of restructuring distressed commercial bank loans, also provides a new impetus to the syndicated loan market. Helped by the easy monetary conditions in industrial countries in the early 1990s, syndicated loans reach a new peak at 190 billions of US dollars in 1997, almost four times higher than the level reached in the early 1980s. This time around, the largest beneficiaries in emerging markets were the East Asian countries, with gross issuance reaching almost $100 billion in 1997. The nationality of lenders also changed: While in the early 1980s most of the syndicates were composed of U.S. banks, in the 1990s Japanese and European banks played a leading role in lending to emerging markets, especially to East Asian countries. The boom in the 1990s in the syndicated loan market was not confined to emerging markets. Corporations in industrialized countries followed suit. By 2004 international syndicated lending had increased to 2.5 trillions of US dollars and mature markets had captured the lion share of the international syndicated loan market, with gross issuance reaching 1.8 trillions of US dollars in 2004.

A new feature of financial integration in the 1990s is the forceful development of an international equity market. In this decade, corporations not only start to raise capital in the highly unregulated international bond and syndicated loan markets, but also start to participate in regulated equity markets in various financial centers. For example, the liquid U.S. capital

[11] The key innovation of the Brady Plan is to allow the commercial banks to exchange their claims on developing countries into tradeable instruments, allowing them to eliminate the debt from their balance sheets.

[12] Brady bonds are Dollar denominated bonds, named after US Treasury Secretary Nicholas Brady, traded on the international bond market, allowing emerging countries to transform nonperforming debt into mostly collateralized bonds. Most of the bonds had the principal collateralized by especially issued US Treasury 30-year zero-coupon bonds purchased by the debtor country using funding from IMF, the World Bank, and the country's own foreign exchange reserves. Interest payments on Brady bonds are in some cases also guaranteed by securities of at least double-A rated credit quality held with the New York Federal Reserve Bank.

markets start attracting record numbers of foreign issuers and investors in the early 1990s. In particular, many foreign issuers find it easiest to raise capital in the United States through the creation of American Depositary Receipt Programs, with ADRs being traded on US stock markets in lieu of the foreign shares. But the U.S. stock market is not the only one attracting foreign issuers. With financial integration of the world's capital markets escalating, firms are now able to issue equity underwritten and distributed in multiple foreign equity markets, sometimes simultaneously with distribution in the domestic market, in what is known as the Euroequity market. The so-called Euroequity market is just a generic term for international securities issues originating and being sold anywhere in the world. The most important issues in the Euroequity market have been those related to the privatization of government-owned business, with the Thatcher government creating the model for the privatization British Telecom in December 1984. At that time, the issue was so large that it was deemed convenient to sell *tranches* to foreign investors in addition to the sale to domestic investors.[13] Since then, both governments in developed and emerging markets have implemented the privatization of state-own utility companies with the help of foreign *tranches*.[14] Overall, international equity issuance increases from 13 billions of US dollars in 1990 to 314 billions of US dollars in 1997. The magnitude of equity issues is not directly comparable to the magnitude of debt issues because unlike equity, bonds have finite maturities. Firms typically roll over bonds at maturity, and hence a part of the debt issues go towards refinancing old debt and only the remaining part is new capital.

But the 1990s as the 1980s have been plagued by crises. In the aftermath of these crises, net capital flows to emerging markets dwindle to a trickle suggesting that the era of international financial integration may have come to an end at least for the developing world. But the evidence from gross issuance in bond, equity, and syndicated loan markets paints a somewhat different picture. While in the late 1980s Latin America's gross issuance in international markets crashed to about 4 percent of the levels attained in the early 1980s, in the late 1990s, total issuance declined only to about 60 percent of its peak in 1997. Similarly, gross issuance of

[13] A *tranche* is an allocation of shares, typically to underwriters that are expected to sell to investors in their designated geographic market.

[14] One of the largest Euroequity issues was made by Deutsche Telecom A.G. ($13.3 billion in November 1996). Among initial public offerings of government-owned public utilities of emerging economies have been that of Teléfonos de México ($2 billion in 1991) and the one by Yacimientos Petrolíferos Fiscales Sociedad Anónima of Argentina ($3.04 billion in 1993).

East Asian countries collapsed transitorily in 1998 and 1999 to rebound afterwards, reaching their previous peak levels in 2004.

To examine the extent of participation in international capital markets of the countries in the various regions, Figure 4 tallies the proportion of countries with at least one issuance per year in each of the markets. The picture of international financial integration obtained from this figure is of two regions. The first one, including financial centers, other mature economies, and Asia shows basically all countries accessing the three international markets. In contrast, the other region, including Latin America, Middle East and Africa, and Transition Economies shows and area with interrupted access to international capital markets. Importantly, access to equity market seems more limited while access to the syndicated loan market is more widespread across the various countries in each region.

IV. The Model

In order to analyze the behavior of international issuance in bonds, loans and equity we developed and estimated a non stationary Bayesian dynamic latent factor model.

Standard Bayesian dynamic latent factors (as the one developed by Otrok and Whiteman (1998) and by Kose, Otrok and Whiteman (2003)) require stationarity of the data generating process. They are therefore unsuitable to capture one of the central features of international issuance in the last 30 years, i.e., the high co-movements among issuance in different countries and different markets at both business cycle and secular frequencies. For this reason, we develop a model that allows for both stationary and non-stationary components in the common latent factors. Moreover, since issuance data is available starting from different dates in different countries, we generalized the model in order to allow for an unbalanced panel.

In the empirical analysis we study issuance in several regions and markets[15] over a 30 year period (i.e., bond issuance in Latin America from 1980 and 2005). Let N denote the number of regions, M the number of financial instruments per region and T the number of periods. There are $N \times M$ observable variables denoted by

$$y_{i,m,t}, \qquad i = 1, 2, \ldots, N \qquad\qquad m = 1, 2, \ldots, M \tag{1}$$

[15] In the paper, we use the words market and instrument interchangeably.

where $y_{i,m,t}$ denotes log of the issuance level of region i in market m at time t.

The co-movements in the cross-country panel of the observable variables are characterized by four unobservable factors, i.e., three market specific factors and one world factor. Both the market specific factors and the world factor have a permanent component and a temporary component.

We denote by f_t^{mP}, $m = b, e, l,$ the permanent components in the market factors; by f_t^{mT}, $m = b, e, l$, the temporary components of the market factors; by f_t^{wP} the permanent components in the world factor; by f_t^{wT} the temporary components in the world factor. We can write each observable as a linear combination of the unobservable factors, i.e.,

$$y_{i,m,t} = a_{i,m} + b_{i,m}^{wP} f_t^{wP} + b_{i,m}^{wT} f_t^{wT} + b_i^{mP} f_t^{mP} + b_i^{mT} f_t^{mT} + \varepsilon_{i,m,t} \qquad (2)$$

The coefficients of the linear combination, $b_{i,m}^{wP}$, $b_{i,m}^{wT}$, $b_{i,m}^{mP}$, and $b_{i,m}^{mT}$, are called factor loadings. They reflect the degree to which variation in $y_{i,m,t}$ can be explained by the permanent and transitory components of the world factor and of the market factors.[16]

The stochastic process $\varepsilon_{i,m,t}$ represents the idiosyncratic component of issuance in country i and in market m, i.e., the variability of the observable that cannot be explained by movements of the latent factors. The idiosyncratic components are uncorrelated across regions and across instruments. They are assumed to be normally distributed and (possibly) serially correlated. They follow an AR(2) process:

$$\varepsilon_{i,m,t} = \lambda_{i,m}^1 \varepsilon_{i,m,t-1} + \lambda_{i,m}^2 \varepsilon_{i,m,t-1} + \mu_{i,m,t} \quad i = 1, 2, \ldots, N \qquad m = 1, 2, \ldots, M \qquad (3)$$

where the shocks $\mu_{i,m,t}$ are normally distributed white noise processes with variance $\sigma_{i,m}^2$.

Similarly, the evolution of the temporary component of each factor is governed by a second order autoregressive process. In particular,

$$f_t^{mT} = \alpha_m^1 f_{t-1}^{mT} + \alpha_m^2 f_{t-1}^{mT} + \mu_t^{mT} \qquad m = b, e, l \qquad (4)$$

$$f_t^{wT} = \alpha_w^1 f_{t-1}^{wT} + \alpha_w^2 f_{t-2}^{wT} + \mu_t^{wT} \qquad (5)$$

[16] Notice that there are M×N time series to be explained by 2M+2 factors.

where the shocks μ_t^{mT} and μ_t^{wT} are normally distributed white noise processes with variances σ_w^{T2} and σ_m^{T2}.

Finally, the evolution of the permanent components of each factor are modeled as I(1) processes. In particular,

$$f_t^{mP} = \delta^w + f_{t-1}^{mP} + \mu_t^{mP} \qquad m = b,\ e,\ l \tag{6}$$

$$f_t^{wP} = \delta^m + f_{t-1}^{wP} + \mu_t^{wP} \tag{7}$$

where the shocks μ_t^{mP} and μ_t^{wP} are normally distributed white noise processes with variances $\sigma_{w,P}^2$ and $\sigma_{m,P}^2$; δ^w and δ^m represent the drifts of the I(1) processes.

Note that, since the shocks $\mu_{i,m,t}$, are uncorrelated white noise processes, all co-movements among the observable variables are mediated by the (permanent and transitory) components of the latent factors.

There are two identification problems in the model we have just described: the signs and scales of the factors and the factor loadings are not separately identified. Following Kose, Otrok and Whiteman (2003), we identify the signs of the factor loadings by requiring one of the factor loadings to be positive for each of the factors. In particular, we require that the factor loading for the world factor be positive for U.S. bond issuance; instrument factors are identified by positive factor loadings for the corresponding U.S. instrument issuance. Scales are identified by assuming that the variances of the innovations in both the permanent and temporary components of each factor (σ_w^{P2}, σ_w^{T2}, σ_m^{P2}, σ_w^{T2} and σ_m^{T2}, $m = 1, 2 \ldots M$) are equal to one.[17]

As always in Bayesian analysis, all the parameters in the model are assumed to be random variables with a given prior distribution. We choose uninformative prior distributions for all the parameters of the model. The autoregressive parameters are assumed to be uniformly distributed in the region within which the process is stationary.[18]

For each observable, we estimate the posterior densities (given the observable data) of the factor loadings, $b_{i,m}^{wP}$ $b_{i,m}^{wT}$ $b_{i,m}^{mP}$ and $b_{i,m}^{mT}$, the autoregressive parameters $\lambda_{i,m}^1$ and $\lambda_{i,m}^2$, and the

[17] This follows Sargent and Sims (1977), and Stock and Watson (1989, 1993).
[18] Such stationary region is a triangle with points at (-1,2), (-1,-2) and (1,0).

innovation variance $\sigma^2_{i,m}$ [19]. Moreover, we estimate the posterior densities of the permanent and transitory components of each factor, in particular, the posterior the autoregressive parameters of the transitory components (α^1_m α^2_m and α^1_w α^2_w) and the posteriors of the drifts (δ^w and δ^m).

In order to estimate the posterior distributions of the parameters, we generate random samples from the joint posterior distribution of the parameters and the unobserved factors given the data using a Markov-Chain Monte Carlo (MCMC) procedure. Taking starting values of the parameters and factors as given[20], we first sample from the posterior distribution of the parameters conditional on the factors; next we sample from the distribution of the world factor conditional on the parameters and the instrument factors; then we sample each instrument factor conditional on the world factor and the parameters. We use "Metropolis-Hasting" procedure to draw from the posterior distribution of the factors given the parameters and from the posterior distribution of all parameters.[21]

Under regularity conditions satisfied here (see Geweke, 1996 and 1997), the Markov chain so produced converges, and yields a sample from the joint posterior distribution of the parameters and the unobserved factors, conditioned on the data. In the result section, we present the average of 1,000,000 draws from the posterior distributions of each of the parameters and the factors.[22] In computing the average, we discard the first 100,000 draws from a "burn in" phase.

[19] For those observable, for which we have data since 1980.4 (the first quarter for which we have data) the intercept is set equal to the starting value of the series (since the 1980.4 level of each factor is set to 0). For the series starting later than 1980.4, it is set so as to fit the first observation with zero error.

[20] The starting values of the factor loadings for the US series are set equal to the standard deviations of the log changes of the series themselves. The starting values for the market factor drifts are set equal to the average log change in the US series divided by the starting value for the series factor loadings; the started value of the world factor drift is set equal to that of the bond factor drift. For all non US series, the starting values of the factor loadings on the temporary components of the factors are set equal to the standard deviations of the series themselves. For all non US series, the starting values of the factor loadings on the permanent components are set equal to the standard deviations of the log changes of the series themselves divided by the starting values of the factor drifts. The starting values for the standard deviations of the idiosyncratic components are set equal to the standard deviations of the log changes of the respective issuance series. The starting values for the shocks to the permanent and temporary components of the world and instruments factors are drawn from a standard normal distribution. The starting values for the autoregressive parameters are set equal to zero. The results that we obtain are robust when with start the MCMC from different starting values.

[21] The average acceptance rate for all the parameters is 25%.

[22] Our findings are not significantly affected if, instead of the average, we consider the mode of the posterior distributions.

Let us now describe the dataset. We use data on issuance for three markets[23], the bond, loan and equity market. For each market, we have data on nine regions, four financial centers (United States, Japan, Germany, and the United Kingdom) and five periphery regions (Other Mature Economies, East Asia, Latin America, Middle East and Transition Economies). For the periphery, we chose to group the country data in regions, since many countries usually issue only during some quarters of any given year.

In the estimation, we look at quarterly log levels of issuance. In order to filter out seasonal fluctuations we take a four quarter moving average of the raw data. For most regions and markets we have quarterly issuance data from 1980 until 2004; for some of the countries and regions the data is available only starting from later years.

V. World and Market Factors: The Estimates

To examine the evolution of international financial integration and market peculiarities, Figure 5 shows the global factor and the three market factors.[24]

The top left panel shows the global factor. This factor captures a worldwide an uninterrupted increase in issuance in the 1980s. Interestingly, during this decade all Latin American countries lost access to international capital markets following the debt crisis sparked by the Mexican foreign debt default in August 1982. Our estimates of the global factor suggest that the Latin American crisis did not have any impact on the growth of international issuance. Interestingly, the global factor shows a slowdown in international issuance in the first half of the 1990s, which captures the slowdown in issuance in most mature economies and coincides with the recession and bond crisis in the United States,[25] the EMS crises in 1992 and 1993, and the prick of the bubble in Japan. World issuance as captured by the estimated global factor starts recovering in 1994 and continues to grow at an accelerated pace until 2001 when the global

[24] Since the scales of the factors and the factor loadings are not separately identified, to provide a dimension to the global and market factors, the panels in Figure 5 show the product of each factor multiplied by the mean of the absolute value of the factor loadings. Note that the model is estimated in logs.

[25] In the 1980s, the market for relatively risky bonds in the United States— carrying Moody's ratings of Ba1 or less and S&P ratings of BB+ or less—grew explosively. Growth was interrupted on several occasions in the face of failures by prominent issuers and a major market maker. After rapid expansion between 1982 and 1986, issuance remained at high levels through the rest of the decade. Then, in 1990, it practically disappeared with the collapse of Drexel Burnham Lambert, previously the largest underwriter and market maker in junk bonds. Issuance rose sharply over the next several years as the economy recovered and other firms became active underwriters.

economy starts to slow down[26] and uncertainty heightens following the attacks on September 11. As shown in Figure 1, international capital markets start recovering in 2003 following the widespread signs of the global economic upturn, with the estimated global factor capturing this dramatic upsurge in issuance.

The next three panels show the worldwide common evolution of issuance in the three markets: bonds, equities, and syndicated loans. In contrast to the global factor that captures the overall common movement in issuance in all international capital markets, these three factors capture the common fluctuation in international issuance within each market. As shown by the bond market factor, overall issuance in this market soars in the early 1980s. The spur in growth in the 1980s of the international bond market is closely linked to the wave of international financial liberalization in European countries as they move towards the European Monetary System. Their participation in the international bond market increases more than 10-fold from 6 billions of dollars in 1980 to 72 billions of dollars in 1989. The growth in international bond issuance captured by the bond factor in the 1980s seems to be also linked to the overall monetary conditions in industrial countries. For example, the acceleration in issuance rates in the mid 1980s followed by the slowdown in 1987 coincides with the easing in U.S. monetary conditions in 1985-1986 followed by the tightening of 1987 and the U.S. bond and stock market collapse. Following the slowdown in the late 1980s, the bond factor shows continuous growth with a relatively mild slowdown during the tightening of monetary conditions in industrial countries in 1994 and during the aftermath of the Mexican crisis.

The next panel tracks the equity factor. The evolution of this factor shows a highly pronounced boom-bust pattern. The first peak occurs right before the stock and bond market crash in 1987, with the equity factor capturing a "market" slowdown until 1989. This boom-bust pattern reflects the evolution of equity issuance in the financial centers and other mature economies. During the early 1990s, the equity factor reflects a new upturn in issuance in part due to the access of emerging markets to international equity markets. This is the time of the process of privatization of large public firms in Latin America. Starting in 1994, this factor captures a slowdown in equity issuance, fostered in part by the Mexican, Asian, and Russian crises. The last boom-bust pattern captured by the equity factor is related to the upturn in

[26] As described in the BIS Quarterly Review, a variety of disappointing macroeconomic data and profit announcements, such as the lower-than-expected September U.S. employment report and the July German industrial production index spread gloom in global capital markets around the world.

issuance of mature economies, with the boom ending in 2000 with the world stock market collapse and amid signs of a weakening world economy. Only by the end of 2002 equity issuance had surged again.

Finally, the loan factor captures the common fluctuations in the syndicated loan market. In contrast to the equity factor, the loan factor does not capture the booms and busts in the international syndicated market suggesting that these booms and busts are an idiosyncratic phenomenon in each region and are not coordinated. For example, the sharp decline in syndicated loan issuance of Latin American countries starting in 1982 does not spread worldwide. Similarly, the sudden stop in issuance of East Asian countries following the crisis in 1997 is circumscribed to that region and does not spread to other emerging countries or mature economies.

To examine the extent of participation of the various regions in the international capital markets we look at two measures. First, we estimate the share of the variance of the changes in issuance in each market due to the world factor and the instrument factor. This first measure captures the extent of co-movement of quarterly fluctuations in issuance in each region with the worldwide shocks as captured by the global and instrument factors over the whole sample, that is, from 1980 to 2005. Second, we examine the pattern of the idiosyncratic component of total issuance for each region to evaluate whether some regions lag in the process of international financial integration or whether the evidence suggests the presence of "excessive" booms and busts in emerging markets as suggested by Stiglitz (1998).

Table 1 shows the variance decomposition of bonds, equities, and syndicated loans issuance for each region. Since the world, market, and idiosyncratic factors are orthogonal, the variance of gross issuance series can be decomposed as[27]

$$var(\Delta y_{i,m}) = (b_{i,m}^{wP})^2 var(\Delta f^{wP}) + (b_{i,m}^{wT})^2 var(\Delta f^{wT}) + (b_{i,m}^{mP})^2 var(\Delta f^{mP}) + (b_{i,m}^{mP})^2 var(\Delta f^{mP}) + var(\Delta \varepsilon_{i,m})$$

To measure the extent of integration of each region *i* and market *m,* we propose two indices:

[27] Even though the factors are uncorrelated, samples taken at each pass of the Markov chain will not because of sampling error. To ensure adding up, we orthogonalized the sampled factors, ordering the world factor first and the market factor second. The sample correlation between the raw factors was small so the order of orthogonalization has no impact on the results.

1. **Index of Global Financial Integration:** This index reflects the extent of co-movement of issuance of region *i* and market *m* with all markets and regions[28]:

$$\text{Index of Global financial integration for region } i \text{ and market } m = \frac{(b_{i,m}^{wP})^2\ var(\Delta f^{wP}) + (b_{i,m}^{wT})^2\ var(\Delta f^{wT})}{var(\Delta y_{i,m})}$$

2. **Index of Market Financial Integration:** This index captures the extent of co-movement of issuance in of region *i* and market *m* with issuance in market *m* in all other regions. That is, this index captures the worldwide synchronization of issuance by markets.

$$\text{Index of Market financial integration for region } i \text{ and market } m = \frac{(b_{i,m}^{mP})^2\ var(\Delta f^{mP}) + (b_{i,m}^{mP})^2\ var(\Delta f^{mP})}{var(\Delta y_{i,m})}$$

Note that the share of the variance explained by the idiosyncratic factor,

$$\frac{var(\Delta \varepsilon_{i,m})}{var(\Delta y_{i,m})}$$

captures the extent of insulation of issuance in a particular market in one of the regions to world shocks and generalized market shocks.

Table 1 summarizes the extent of world and market integration for each region and for each market. To have a broad assessment of integration (co-movement) in each market, the top panel of the table shows the average indices of global and market integration as well as the share of the variance explained by idiosyncratic fluctuations separately for bonds, equities, and loans across all nine regions in our sample. The evidence in this top panel shows that fluctuations in issuance in the equity market are substantially more coordinated than those in bonds or loans markets. The co-movement in fluctuations in equity issuance around the world is twice as high as the co-movement observed in bonds and loans markets. The average idiosyncratic component in equity markets can just explain 37 of the fluctuations in issuance. In contrast, the average idiosyncratic component across all regions for bonds and loans markets explains more than 60 percent of the variance of total issuance.

[28] This measure (and the other ones that we present in this Section) is calculated at each pass of the Markov chain. We report the median of their posterior distributions.

The next panels provide a higher resolution picture of the extent of the co-movement in issuance for each market and region. Interestingly, when we examine debt instruments (bonds and loans) Japan stands out as the less integrated mature economy, with international issuance being mostly explained by idiosyncratic factors rather than by common movements across markets and regions: the variance of the idiosyncratic factor explains 84 percent of the total variance for the bond market and 89 percent for the loan. Similarly, Latin America and the Middle East regions are the two less integrated regions among mature economies. International issuance in these two areas is mostly explained by idiosyncratic factors, with the share of the idiosyncratic factor in total variance oscillating between 80 and 94 percent of the total variance in these regions. In sharp contrast, issuance in the mature countries region is in large part explained by world shocks, with the share of the variance explained by idiosyncratic factors being 18 and 12 percent of the variance of issuance in the bonds and loans markets, respectively.

To have a sense of synchronization of international fluctuations, both at a global and market level, Table 2 shows the sign of the loading factors for all the regions and markets. We examine debt markets separately from equity markets because in the case of bonds and loans markets most of the co-movement across regions is captured by the "market" factor. Interestingly, for bonds and loans, all the factor loadings of the permanent component of the market factor across the all regions are positive, indicating that permanent fluctuations in global financial integration affected basically all regions in the same direction. In contrast, transitory shocks affect various regions in opposite directions. In the case of equity markets, both the global and the market factors explain in large part the fluctuations in issuance in this market. With the exception of Japan and the Middle East countries, the loading factors of the permanent components are all positive, again indicating that global and market shocks affected issuance around the round in the same direction. This is not the case with transitory shocks.

Figures 6 and 7 show total issuance in the three markets, both actual values and those predicted using the global and market factors. Figure 6 shows total issuance of the financial centers and Figure 7 shows total issuance of the financial periphery. Several features of these figures are noteworthy. First, the factor model seems to predict quite well the fluctuations in issuance in most mature markets both in the 1980s and the 1990s, suggesting no time-varying patterns of financial integration for these regions. Second, the global and market factors do not

explain movements in total international issuance of Japan.[29] The estimated idiosyncratic factor model uncovers a time-varying pattern in international issuance of Japan, with international issuance exceeding world patterns in the 1980s, lagging relative to world developments in the early 1990s, and again recovering somewhat in the late 1990s and again in 2003. Third, global and market factors do not explain as well the fluctuations in international issuance in emerging markets. In particular, in the case of Asia and Latin America there is evidence of boom-busts cycles in international issuance when compared with the pattern of issuance in international markets. Fourth, transition economies are shown as lagging in international issuance when compared with the pattern estimated using the global and market factors, only catching up since 2001.

VI. Determinants of Idiosyncratic Factors: Preliminary Estimations

As shown in our estimations financial markets have steadily become more integrated globally, with both governments and corporations around the globe increasingly accessing international markets to fund their activities.[30] But integration has not proceeded at the same pace around the globe. In particular, emerging economies' access to international capital markets has fluctuated widely and as captured by our estimations with booms and busts in various regions. Naturally, changing economic conditions, restrictions to capital mobility, and political factors may explain the country-specific characteristics of international issuance.

We now relate the estimated idiosyncratic component to various economic and political indicators. In these preliminary estimations, we examine the role of regional political risk and risk in international capital markets.[31]

The quality of institutions, the extent of corruption, government's ability to carry out its declared programs, and its ability to stay in office may influence international issuance. To

[29] The global and market factors do explain equity primary issuance in Japan as discussed before. Figure 6 shows total issuance. Since bond and loan issuance is far much larger than equity issuance, this figure reflects the behavior of bond and loan issuance.

[30] It is true that in perfectly integrated capital markets, households can diversify their portfolios internationally, and hence both governments and corporations would not need to raise capital from outside their borders. Still, perhaps because of liquidity of domestic capital markets or restrictions in domestic financial markets, firms and governments have to directly raise capital from abroad to take advantage of lower cost of capital outside the country borders.

[31] Obviously, the state of the economy should be a natural indicator of financing needs. We are now constructing indices of production for the nine regions in our sample using quarterly data to match the frequency of the issuance data.

capture this possibility we use the **index of political risk** published in the International Country Risk Guide (ICRG). This is a composite index that assesses political stability and the quality of governance of the country. The political stability indicators provide rankings on socioeconomic pressures at work in society that could constrain government action or fuel social dissatisfaction, as well as rankings of domestic political violence or ethnic tensions. The indicators on governance provide rankings on corruption within the political system as well as assessments of the strength and impartiality of the legal system and of popular observance of the law. There is also information on the institutional strength and quality of the bureaucracy. A country rank in the 80-100 percent range is considered very low risk while a country ranked below 50 percent is considered very high risk.

We also include in our estimations two measures of risk in international capital markets. Our first measure is an estimate of the time-varying variance of the Morgan Stanley Capital International World index. Our second measure is the term premium calculated as the difference between the U.S. 10-year-note yield minus the U.S. 1-year Treasury Bill rate.

Table 3 reports panel estimations for mature and emerging economies. The top panel reports the estimates for emerging countries. Our results indicate that low political risk affects positively international issuance. In particular, if a country/region moves upward in one range (for example from high to moderate risk range), international issuance would increase 4 billion dollars (about 17 percent of the average quarterly issuance across emerging markets in 2005. Finally, volatility in international capital markets adversely affects the country-specific issuance in emerging markets. Both the volatility in the world stock market and the term-premium affect adversely international issuance of emerging markets. The bottom panel shows the results for mature economies. Again, political risk matters, with better country ratings increasing international issuance. The effects in this case are smaller. If a country/region moves upward in one range, international issuance would increase 3 billion dollars (about 1.4 percent of the average quarterly issuance across mature economies in 2005). In contrast to the results for emerging markets, market volatility does not affect adversely the idiosyncratic issuance component in mature economies. In fact, issuance in mature economies increases in times of turmoil suggesting flight to quality, with international investors switching from buying emerging market securities towards purchasing assets issued by industrial economies.

VII. Conclusions

This paper analyzes international issuance in the bond, equity and syndicated loans markets. We study a sample of 101 emerging and developed countries from 1984 until 2004. We consider both private issuance and government issuance. Using Monte Carlo simulation, we estimate a dynamic latent factor model. We estimate a global factor and three instrument specific factors. The four factors account, on average, for at least more than one third of the variance of the original series. We interpret this finding as evidence of integration in primary markets. The result of the estimation also suggest that Japan and Latin American countries stand our with respect to the rest of the world economy, by exhibiting largely idiosyncratic patterns of issuance. Finally, whereas the dynamics in bond and loan issuance are similar, they differ markedly from those of equity issuance.

Our estimates also link country-specific issuance in emerging and mature economies to country fundamentals. We find that as political risk diminishes, emerging countries' access to international capital increases. Interestingly, we find that volatility in capital markets reduces access to international markets of emerging economies. This is not the case for mature economies.

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Appendix

Global and Market Factors: Determinants

The goal of our paper is also to examine the role of various economic fundamentals in explaining the evolution of the world and market factors. One of the factors that should explain the global and market factors is the evolution of world economic activity since when economic opportunities arise, finance should follow. But international issuance is just one part of total issuance of firms and governments. It is also important to examine why firms and the public sector may be interested in issuing overseas. It has been argued that cross-border debt issues offer various advantages for firms. In particular, if firms have important revenues in foreign currencies they can hedge their exchange risk by issuing debt in those countries. This suggests that international issuance should be correlated with international trade. Naturally, as discussed in the text, the worldwide liberalization of the capital account should be at the core of the dramatic rise in international issuance.[32]

As examined in the text, the data indicates highly persistent booms and busts in international issuance. Some have argued that at the heart of these protracted booms (and busts) are easy monetary conditions in financial centers, as for example, captured by low federal funds real interest rates. Also, many have argued that firms around the world are more likely to issue equity in "hot" markets, when world stock market returns are high. Since many of these fundamentals follow non-stationary processes, we examine these relations using cointegration analysis and error-correction estimation. The results are shown in Tables 4-7. The cointegration tests are shown in Table 4 while the error-correction estimates are shown in Tables 5-7.

Table 4 shows that the global factor commoves with capital account liberalization. Table 4 also examines the fundamentals explaining the dynamics of bond versus loan market developments and bond versus equity market developments. Although all the tests are not shown in Table 4, we examine the role of movements in world real interest rates, world stock annual returns, world trade, world output and capital account liberalization. Interestingly, the

[32] The index of financial liberalization is from Kaminsky and Schmukler (2005). The index captures liberalization of the capital account for both emerging and mature economies. The index is constructed based on regulations on offshore borrowing by domestic financial institutions, offshore borrowing by non-financial corporations, multiple exchange rate markets, and controls on capital outflows. The index has a value of 3 when the country is fully liberalized and a value of 1 when the country is fully repressed.

bond versus loan factor is cointegrated with the movements in world trade while issuance in the bond market relative to the equity market commoves with stock returns with protracted movements from bond issuance to equity issuance in episodes of hot stock markets.

Table 5 shows the error-correction estimates for the Global Factor. Interestingly, while overall the trend in international financial integration (as captured by the global factor) is explained by the extent of capital account liberalization over the long run, the estimation suggests that the opening of the capital account may lead to excessive issuance in international capital markets, which is reverted over time. The estimates in this Table also show that episodes of "tight" world monetary policy lead to slowdowns in international issuance around the world.

Table 6 looks at issuance in bond markets relative to issuance in syndicated loan markets as captured by the difference between the bond and loan factors. Interestingly, world trade seems to be more closely correlated with bond relative to loan issuance. Also, tight world monetary conditions seem to affect more adversely loan markets. Finally, Table 7 shows that long protracted periods of high stock market returns can explain the switch between debt and equity finance.

Table 1
Variance Decomposition

Issuance		Factors		
Market	Region	World	Market	Idiosyncratic
Bonds	All Regions	0.06	0.33	0.61
Loans	All Regions	0.13	0.25	0.62
Equities	All Regions	0.25	0.38	0.37
Bonds	United States	0.09	0.24	0.67
	Japan	0.06	0.10	0.04
	United Kingdom	0.03	0.78	0.19
	Germany	0.28	0.07	0.64
	Other Mature Economies	0.01	0.82	0.18
	East Asia	0.03	0.56	0.41
	Latin America	0.02	0.05	0.93
	Middle East	0.02	0.04	0.94
	Transition Economies	0.02	0.33	0.66
Loans	United States	0.34	0.02	0.64
	Japan	0.01	0.10	0.89
	United Kingdom	0.13	0.18	0.69
	Germany	0.04	0.37	0.59
	Other Mature Economies	0.01	0.88	0.12
	East Asia	0.08	0.12	0.80
	Latin America	0.04	0.08	0.87
	Middle East	0.08	0.03	0.89
	Transition Economies	0.44	0.43	0.13
Equities	United States	0.08	0.37	0.55
	Japan	0.33	0.61	0.06
	United Kingdom	0.10	0.23	0.67
	Germany	0.07	0.54	0.39
	Other Mature Economies	0.42	0.23	0.35
	East Asia	0.37	0.17	0.46
	Latin America	0.05	0.64	0.31
	Middle East	0.25	0.25	0.50
	Transition Economies	0.54	0.43	0.03

Table 2
Concordance

Issuance		Factors			
		World		Market	
Market	Region	Permanent	Transitory	Permanent	Transitory
Bonds	United States	+	+	0.04	+
	Japan	+	-	+	-
	Germany	+	-	+	+
	United Kingdom	+	+	+	+
	Other Mature Economies	-	+	+	+
	Asia	-	+	+	-
	Latin America	+	+	+	+
	Middle East	+	+	+	-
	Transition Economies	-	-	+	-
Loans	United States	+	-	+	+
	Japan	-	+	+	-
	Germany	-	-	+	+
	United Kingdom	+	-	+	-
	Other Mature Economies	+	-	+	-
	East Asia	+	-	+	-
	Latin America	-	+	+	-
	Middle East	+	-	+	-
	Transition Economies	+	-	+	-
Equities	United States	+	+	+	+
	Japan	+	-	-	+
	Germany	+	+	+	+
	United Kingdom	+	-	+	-
	Other Mature Economies	+	-	+	+
	East Asia	+	+	+	+
	Latin America	+	+	+	+
	Middle East	+	-	-	+
	Transition Economies	+	+	+	-

Table 3
Explaining Idiosyncratic Total International Issuance
(Pooled Least Squares with Fixed Effects)

Emerging Economies

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	-24.989	3.000	-8.331	0.000
Political Risk	0.415	0.049	8.419	0.000
Stock Market Volatility	-0.001	0.000	0.040	0.000
Yield Curve Slope	-1.419	0.623	-2.279	0.023

R-squared	0.436	F-statistic	37.764
Adjusted R-squared	0.425	Prob(F-statistic)	0.000

Mature Economies

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	-24.831	13.034	-1.905	0.058
Political Risk	0.291	0.157	1.853	0.065
Stock Market Volatility	0.001	0.000	4.721	0.000
Yield Curve Slope	5.212	1.490	3.497	0.001

R-squared	0.236	F-statistic	16.641
Adjusted R-squared	0.222	Prob(F-statistic)	0.000

Table 4
Unrestricted Cointegration Rank Test (Trace)
Null Hypothesis: No Cointegration
P-Values

Fundamentals	Global Factor	Bond-Loan Factor	Bond-Equity Factor
World GDP	0.17	0.23	0.84
World Trade	0.07	**0.04**	0.11
Financial Liberalization	**0.03**	0.25	0.26
Annual Return World MSCI			**0.04**

Table 5

Explaining the Global Factor
Vector Error Correction Estimates

Cointegrating Equation	
Global Factor(-1)	1.00
Financial Liberalization(-1)	-1.11 [-6.09]
C	-2.58 [-5.66]

Error Correction:	**Global Factor**	**Financial Liberalization**
Cointegrating Equation	-0.06 [-4.88]	-0.03 [-3.71]
Δ(Global Factor)(-1)	-0.03 [-0.34]	0.03 [0.46]
Δ(Global Factor)(-2)	0.05 [0.52]	-0.06 [-0.87]
Δ(Financial Liberalization)(-1)	-0.23 [-1.64]	-0.20 [-1.88]
Δ(Financial Liberalization)(-2)	-0.40 [-2.78]	-0.19 [-1.73]
World Real Interest Rate(-1)	0.03 [2.30]	-0.01 [-1.31]
World Real Interest Rate(-2)	-0.04 [-3.16]	0.00 [0.32]
R-squared	0.24	0.10
Adj. R-squared	0.18	0.03

Table 6

Explaining the Market Factors: Bond versus Loan Issuance
Vector Error Correction Estimates

Cointegrating Equation	
Bond-Loan Factor (-1)	1.00
World Trade (-1)	-0.29 [-2.45]
C	1.40 [1.48]

Error Correction:	**Bond-Loan Factor**	**World Trade**
Cointegrating Equation	-0.08 [-2.18]	0.07 [4.42]
Δ(Bond-Loan Factor)(-1)	0.14 [1.35]	-0.13 [-2.81]
Δ(Bond-Loan Factor)(-2)	0.15 [1.34]	-0.06 [-1.24]
Δ(World Trade)(-1)	0.16 [0.72]	-0.44 [-4.44]
Δ(World Trade(-2)	0.32 [1.42]	0.30 [3.09]
World Real Interest Rate(-1)	-0.03 [-2.03]	0.00 [0.59]
World Real Interest Rate(-2)	0.04 [2.51]	0.00 [-0.40]
R-squared	0.11	0.52
Adj. R-squared	0.05	0.48

Table 6

Explaining the Market Factors: Bond versus Equity Issuance
Vector Error Correction Estimates

Cointegrating Equation	
Bond-Loan Factor (-1)	1.00
World Stock Returns(-1)	50.41 [4.45]
C	-4.06 [-2.34]

Error Correction:	**Bond-Equity Factor**	**World Stock Returns**
Cointegrating Equation	-0.01 [-2.14]	-0.01 [-3.20]
Δ(Bond-Equity Factor)(-1)	0.01 [0.12]	0.05 [1.16]
Δ(Bond-Equity Factor)(-2)	-0.01 [-0.10]	0.02 [0.36]
Δ(World Stock Returns)(-1)	-0.41 [-1.65]	0.17 [1.60]
Δ(World Stock Returns(-2)	0.26 [1.04]	0.16 [1.49]
R-squared	0.12	0.15
Adj. R-squared	0.09	0.11

Figure 1
Issuance in International Capital Markets
(Billions of US Dollars)

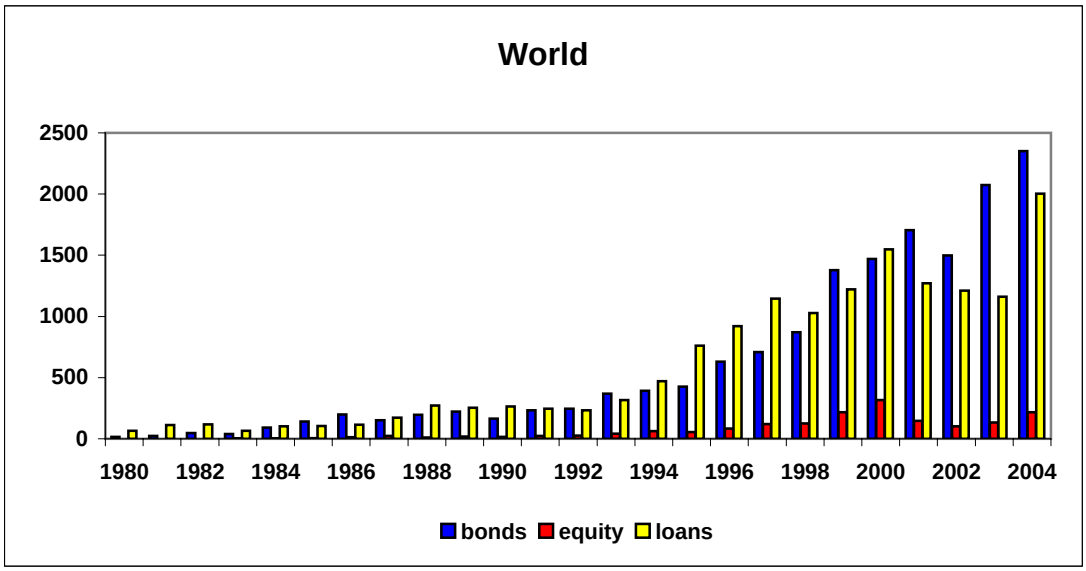
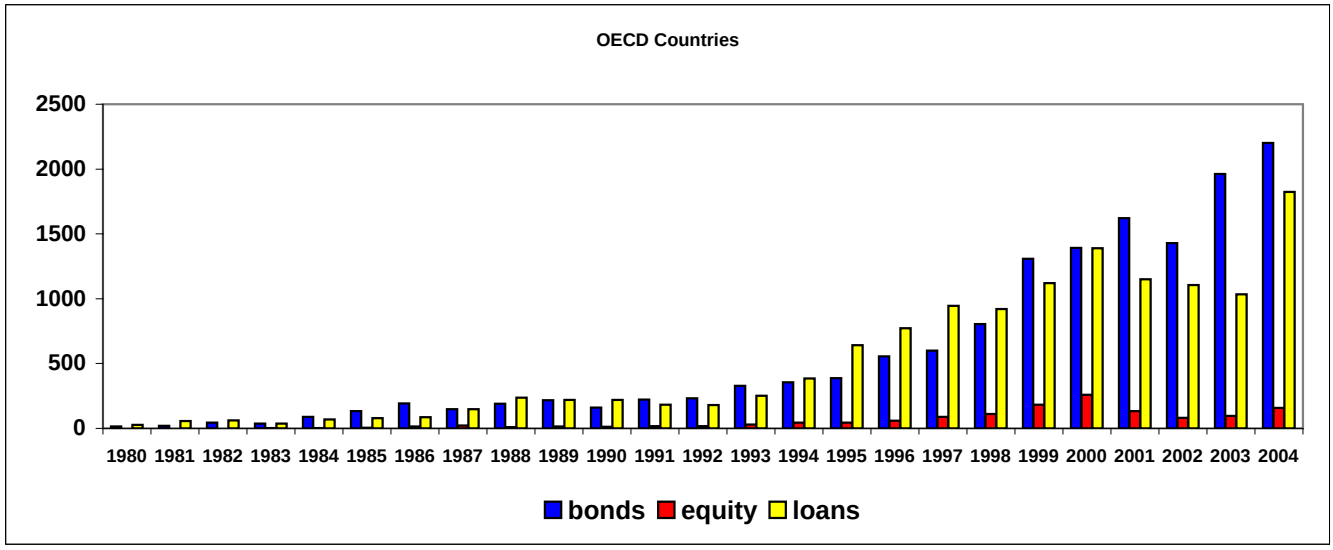


Figure 2
Total Issuance
(Billions of Dollars)



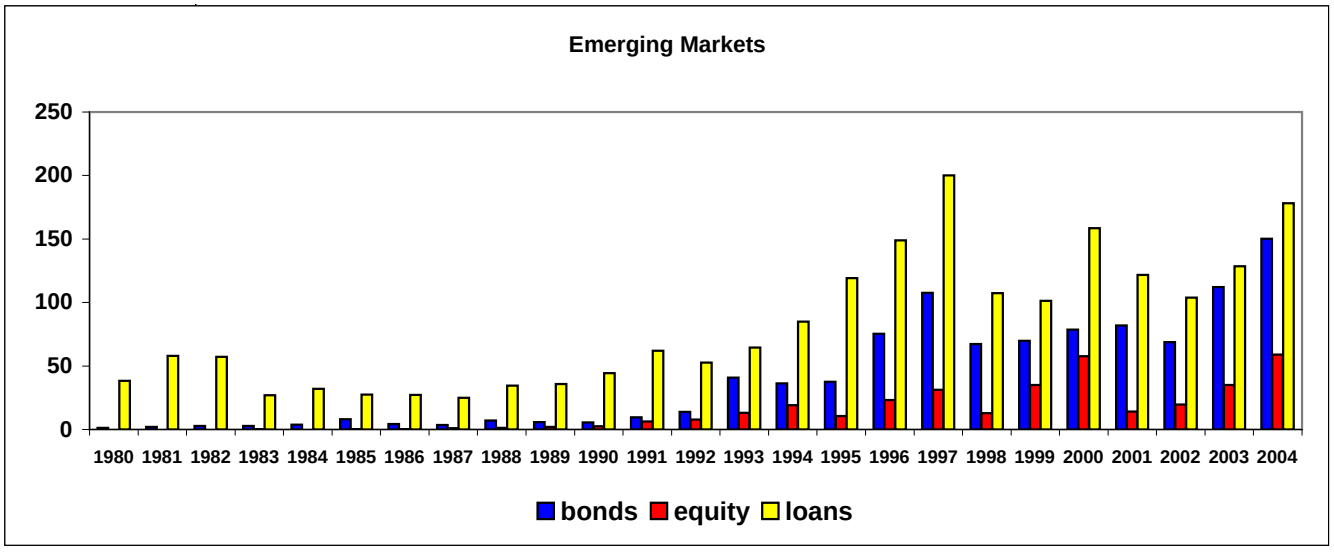
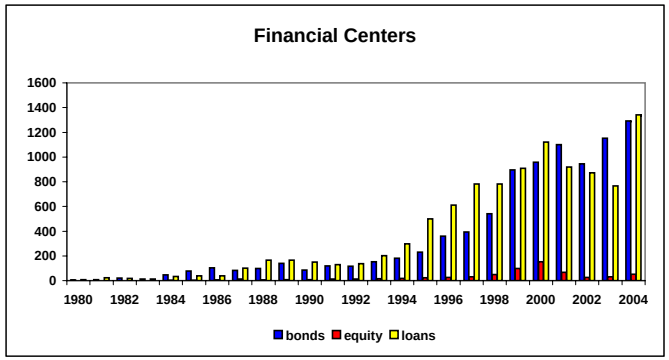
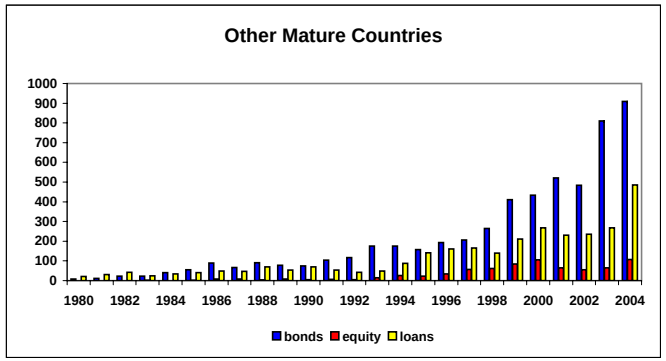
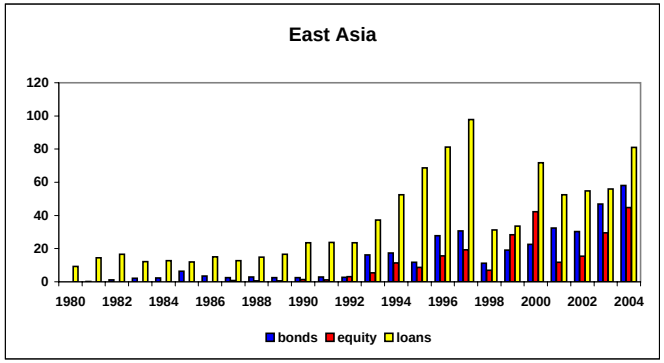
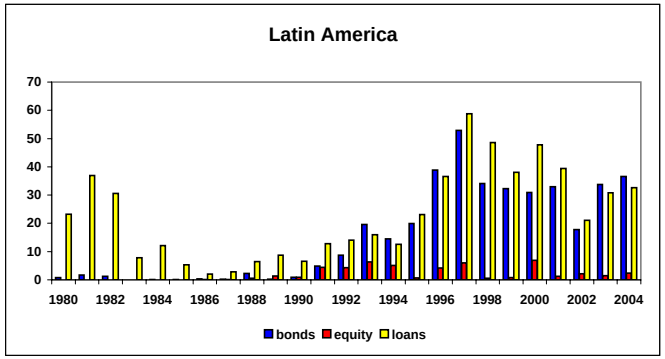


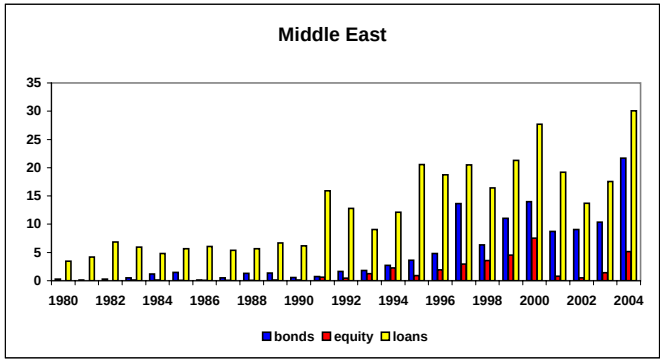
Figure 3
Total Issuance
(Billions of Dollars)











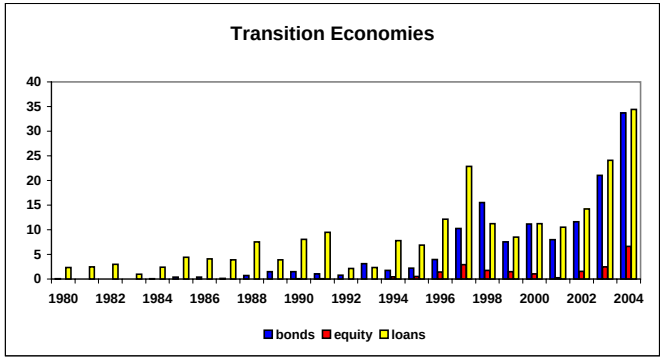
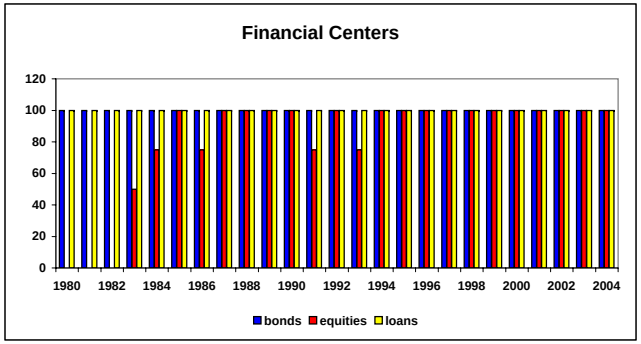
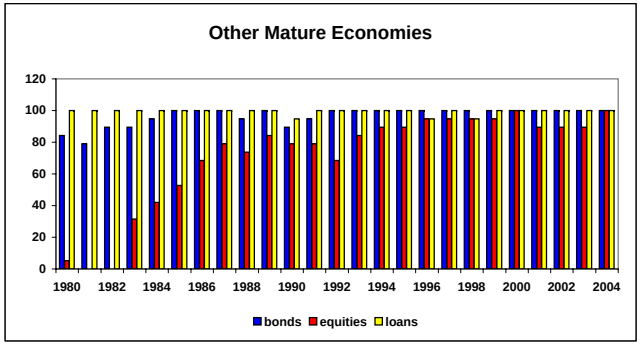
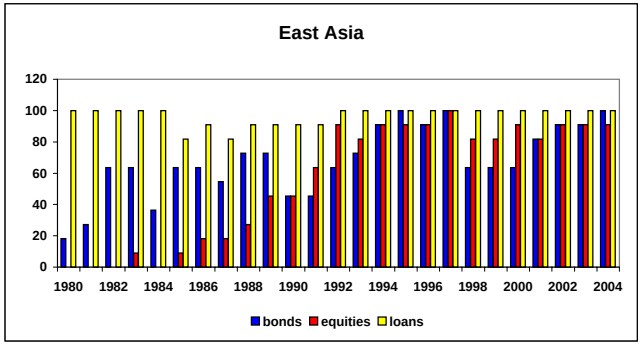
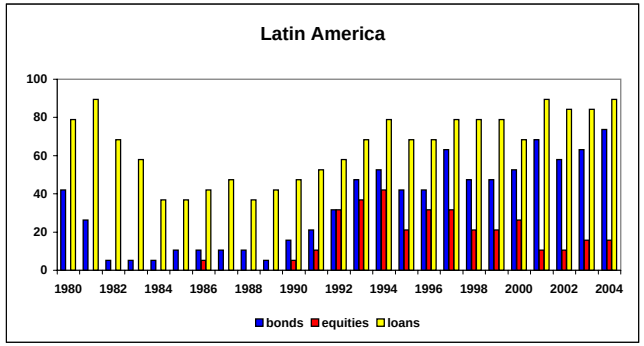


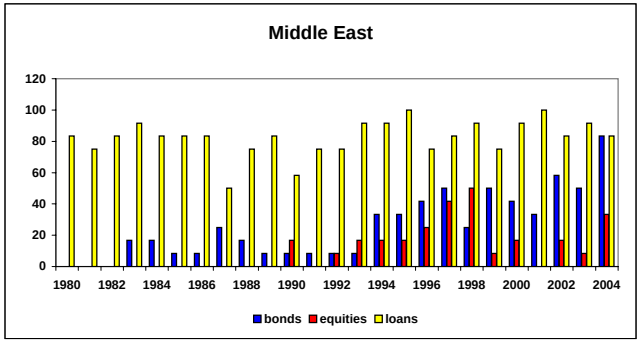
Figure 4
Proportion of Countries with Issuance
(In Percent)











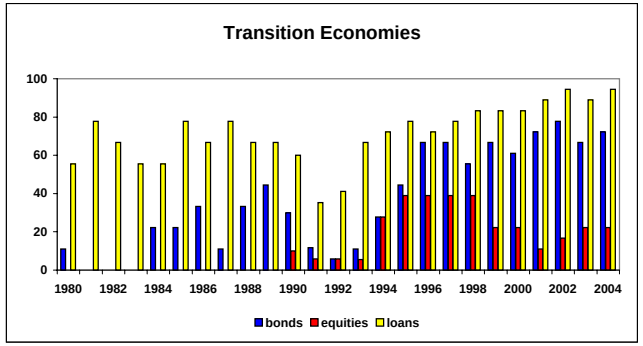
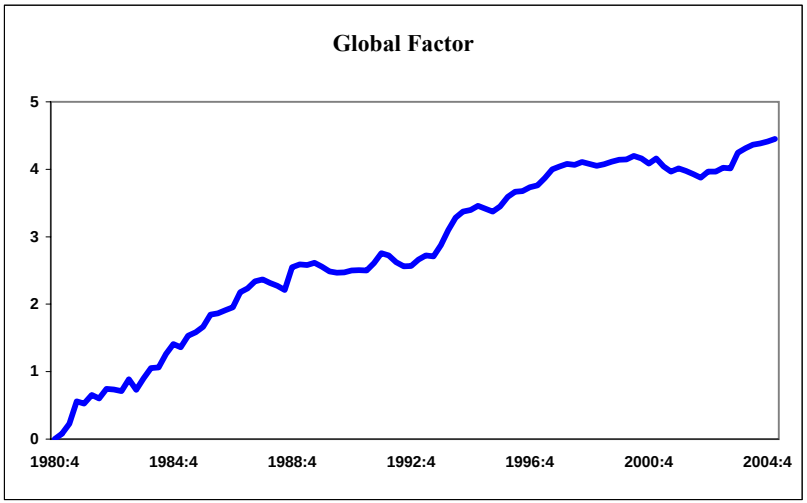
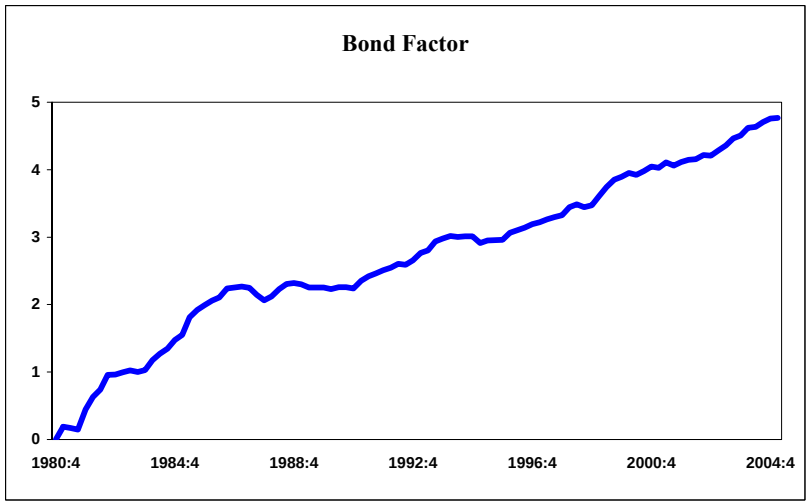
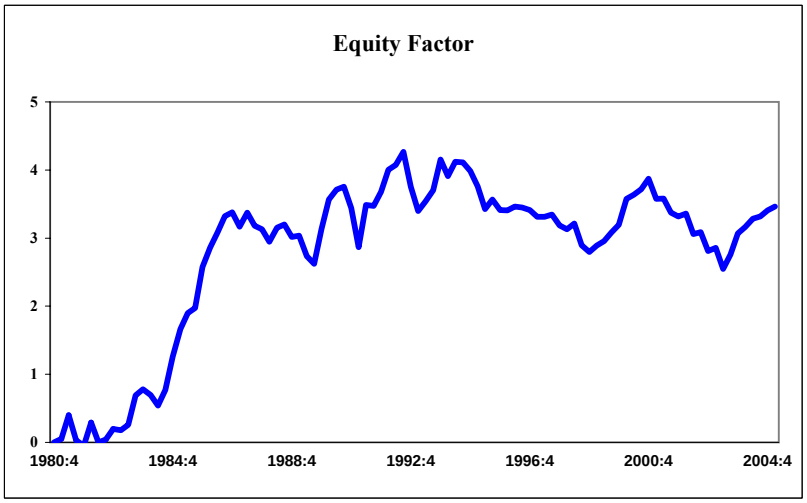


Figure 5
World and Market Factors







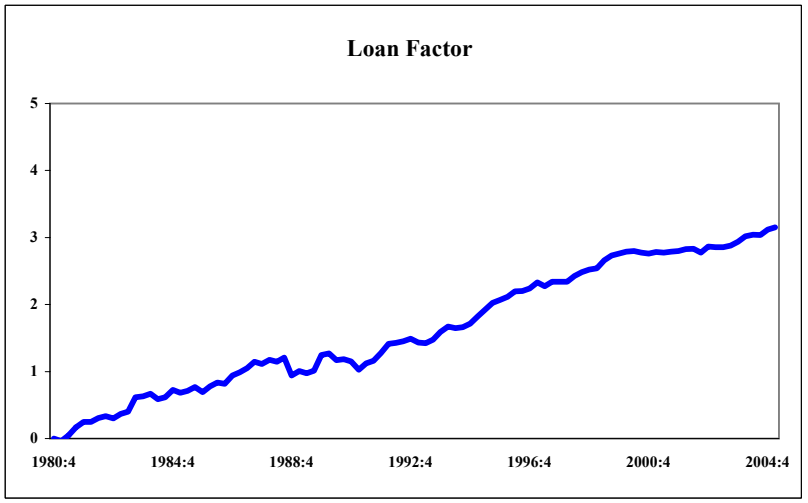


Figure 6
The Center
Total International Issuance
(Billions of Dollars)

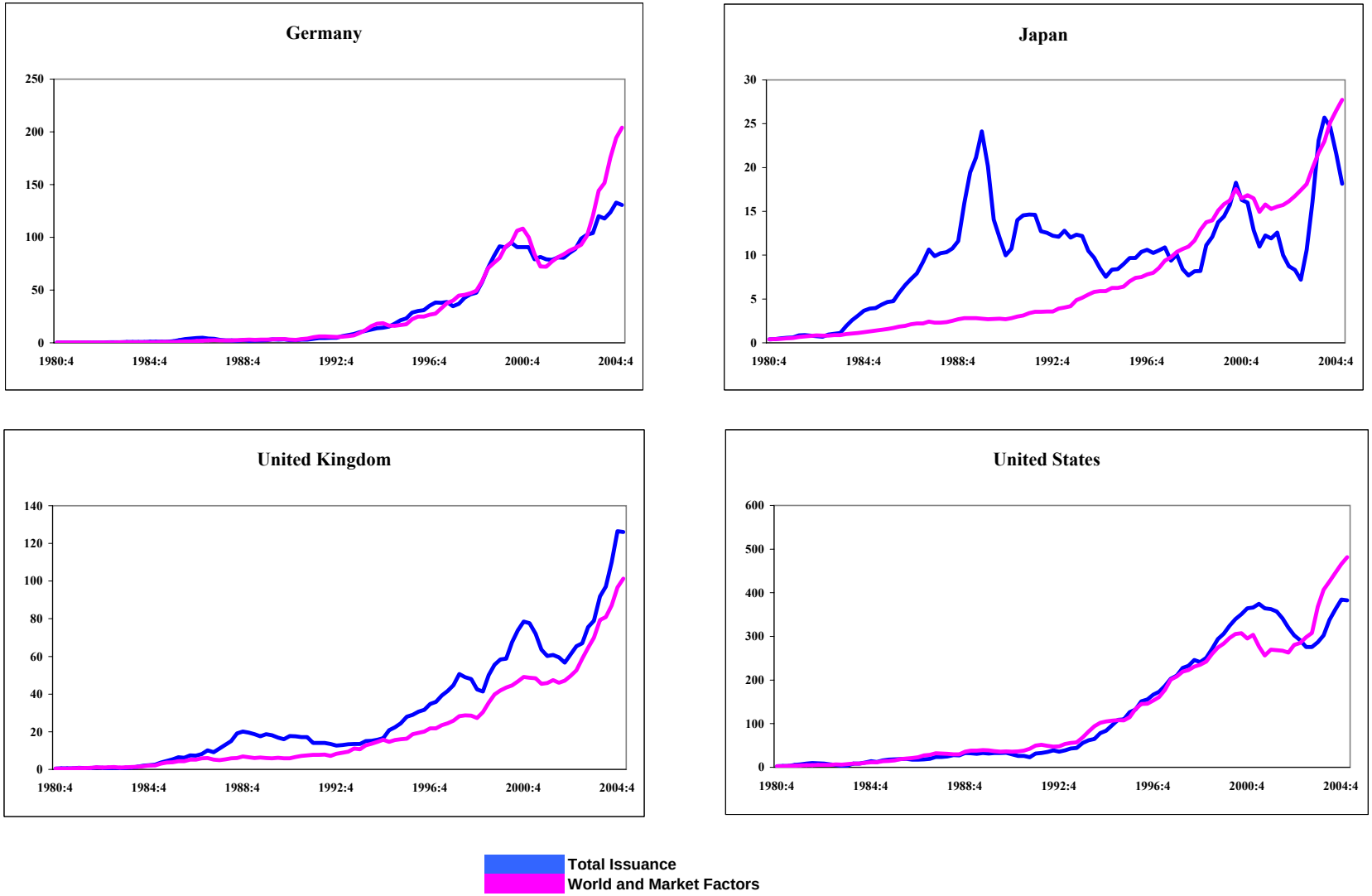


Figure 7
The Periphery
Total International Issuance
(Billions of Dollars)