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World betas, consumption growth, and financial integration

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ABSTRACT

We define a country's beta as the covariance of domestic consumption growth with world consumption growth scaled by the world's variance. Beta is related to a country's risk-taking position in models of international financial integration. Empirically, we find that an increase in beta leads to an increase in average consumption growth. This beta-growth relationship is present only among countries with high levels of financial openness, and is absent among the rest. However, we cannot fully discard the presence of non-financial factors (e.g., trade openness) as determinants of the beta-growth relationship.

1. Introduction

Ramey and Ramey (1995) find that volatility and growth are negatively correlated across countries.[1] Their finding constitutes a challenge to the standard dichotomy between business cycles and growth, and more generally, their evidence points towards a relationship between first and second moments of the growth distribution. In this paper we study another second moment of the growth distribution, namely the covariance of a country's growth with world growth. If we scale this covariance by the variance of world growth it becomes a regression coefficient, which we call the country's *beta*. Using panel regressions in a data set with 74 countries and 40 years, we find that a one-standard-deviation increase in beta increases consumption growth by 40 basis points over the next five years. In other words, a high beta is a good predictor of high growth. Together with the positive effect of beta on growth, our regressions confirm the negative effect of volatility. Similarly to Ramey and Ramey (1995), we conclude that first and second moments of the growth distribution are related phenomena.

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[1] See also Imbs (2007), Kose et al. (2006a, b), and Martin and Rogers (2000).

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Our interest in this new second moment is motivated by the theoretical relationship between beta and growth that arises in models of international financial integration. By providing better diversification and risk-return trade-offs, financial integration allows countries to increase risk-taking and reap the rewards in the form of higher average consumption growth (Obstfeld, 1994a). A simple portfolio model shows that the risk that is rewarded in a financially integrated economy is the one correlated with world consumption. More specifically, risk can be measured with a country's beta. This result is analogous to the main implication of the Capital Asset Pricing Model (CAPM), which predicts that riskier assets–those that covary more with the market–yield higher average returns as a reward for risk. In a similar way, countries with higher world betas are rewarded with faster growth for holding risk.

Crucially for the financial integration hypothesis, we find that the beta-growth relationship is present only among countries with high levels of financial openness. We measure financial openness with the latest index developed by Quinn and Toyoda (2008). This index captures variation in openness across countries and across time for a given country, and it characterizes openness as a process with varying degrees and not only as a dichotomous outcome. From the theoretical standpoint, the beta-growth relationship should be absent among countries that are not financially open, as we also find empirically. Our approach is similar to the one in Lewis (1996), who shows that perfect consumption risk-sharing cannot be rejected among financially open countries, although it clearly fails among other countries. The index of financial openness used by Lewis (1996) is a coarser version of the one developed by Quinn and Toyoda (2008), although based on the same raw data provided by the IMF.

This paper is related first and foremost to the broad literature on financial integration and international risk-sharing. We examine the risk-taking aspect of financial integration and its impact on consumption growth. Obstfeld (1994a) shows that greater risk-taking can increase expected consumption growth and consequently the welfare gains from participating in international financial markets. Increased risk-taking is only one potential channel through which financial openness can have a positive impact on growth. For example, financial openness can increase the flow of foreign capital, lower the cost of capital, and lead to an investment boom (see Gourinchas and Jeanne, 2006; Henry, 2007). This second channel does not require an increase in risk (i.e., an increase in beta) for financial openness to be translated into higher growth. Instead, the effect that we highlight is intrinsically related to risk. By opening up the country to other financial markets, the domestic investors are allowed to choose a higher level of risk since diversification opportunities are better. Beta is, therefore, related to an active portfolio choice that results from the interaction of the investors own risk preferences and the menu of assets that they face, and not simply a side effect of financial openness. It is therefore possible for a financially open (in a regulatory sense) country to have a low beta if, for example, investors are very risk averse. In support of this interpretation we find different levels of beta for countries with similarly open financial markets. In other words, financial openness lifts constraints on international flows, but the actual degree of risk-taking is not fully determined by the regulatory changes.

Although these theoretical points are well-established, the empirical evidence documenting the growth benefits of financial openness is still ambiguous. For instance, Bekaert et al. (2005) find that equity market liberalizations exert a positive influence on future growth. Henry (2007) and Quinn and Toyoda (2008) find similar evidence with other measures of financial openness. Others are more skeptical and argue that the effect is not robust to control variables, sample periods or the choice of countries under study (Edison et al., 2002; Kose et al., 2006a; Obstfeld, 2008). Probably the most closely related paper to ours is the study of consumption volatility and financial openness in Bekaert et al. (2006). They find that the volatility of consumption relative to output declines, or it does not increase at least, as countries liberalize their equity markets (see Kose et al., 2006b for a contrarian view). Their evidence is consistent with the same risk-sharing mechanism that we study. Our paper adds to theirs in that we consider the incentives for increasing risk-taking once agents are able to smooth and hedge domestic shocks.

Despite the fact that our results are in line with the theory of financial integration, we cannot fail to address several important caveats to our conclusions. First, our results are derived from predictive regressions, which reveal association, but not causality. Consumption growth and beta are both endogenous variables, which are related through an equilibrium relationship. Although it is arguably harder to develop a non-financial theory that relates these two in equilibrium, there are still some prominent candidates. For example, trade openness can in principle explain the beta-growth