

## ***Economics Group***

### **Special Commentary**

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# **The Open U.S. Economy and Newton's Third Law**

Since the Great Recession, the importance of global capital flows and foreign economic policy have become increasingly apparent in the determination of U.S. financial (bond and equity) and real (real estate) asset prices. In isolation, a country's economy, (such as the U.S., Japan or the U.K.) may be viewed as a standalone subject. That country can grow at a constant pace subject to its own forces (demographics, economic policies or regulatory change) unless acted upon by an external force. In this way, some analysts would follow the path of Isaac Newton's first law that an individual object will continue to move in a state of constant velocity unless acted upon by an external net force or resultant force. Unfortunately, for the U.S. centric analyst, Newton did not stop there.

Newton's third law, instead, focused on the interactions between different bodies (e.g., the U.S. and other nations) and that there is no such thing as a unidirectional force or a force that acts on only one body. Whenever a first body (the U.S. economy) exerts a force on a second body (the global economy), then the second body also exerts a force back on the first body. Moreover, in the global context, the system becomes even more intriguing when two objects are moving with different velocities, and so, it is impossible to determine which object is "in motion" and which object is "at rest." In a manner similar to Newton, and despite the urging of Aristotle, there is no natural state of rest for the economy. Instead, the economy is a continually evolving system. Outside the textbook, there is no obvious set of equilibrium values for growth and inflation that would generate a stable path for asset prices. So begins our journey.

Economic growth, measured as gains in GDP, is not a fixed equilibrium value, but a series of values along the way. Economics is a study of unbalanced forces acting within this evolving system. Our recognition of these forces includes the partial adjustment of both prices and quantities, the role of expectations and the differential speeds of adjustment for prices and exchange rates for different countries. Our challenge, as decision makers, is that often we are so anxious to get the answer, that we ignore the path to get there. Yet, it is the path that allows us to answer questions under different circumstances rather than attempting to build a decision strategy that performs under only one set of limited assumptions. Under way here is a closer examination of those assumptions and the workings of the economic model, so that we can appreciate the journey and just how sensitive the projection of economic growth is to the method of analysis. So, we begin the first of our four-part investigation.

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### **The Open Economy: A Complex System of Many Moving Parts**

For the United States, our economic framework is that of an open economy that must include the potential influences of economic and policy changes in foreign countries.<sup>1</sup> Capital mobility and a floating exchange rate are characteristics of our U.S. financial framework. Owing to these two market characteristics and generally free market-determined interest rates, we consider our

<sup>1</sup> John E. Silvia, "Dynamic Economic Decision Making," Wiley, Hoboken N.J., 2011.



central bank as an independent institution, not only in the political sense but in the economic sense, in terms of its ability to set policy without significant institutional constraints.<sup>2</sup>

Under such a monetary/financial regime, an easing of monetary policy, as we have witnessed in recent years, would typically lead to a decline in interest rates and an expansion in economic growth and incomes. So far, so good, *ceteris paribus*, we would also suspect, under a flexible exchange rate regime, a weaker dollar and capital outflows from the U.S. But, all other factors are not constant. This is what makes our economy so dynamic and what excites us in the challenge of economic analysis.

While monetary policy is one policy factor that influences asset prices, there is also fiscal policy. In recent years, we have witnessed U.S. fiscal policy turn restrictive in terms of the pace of spending growth, which would evoke a decline in aggregate demand, prices and interest rates as well as a lower dollar exchange rate. That expectation turned out to be only partially correct, as we only saw interest rates decline, while aggregate demand, prices and the dollar exchange rate have continued to rise. Finally, beyond the patterns of economic policy, there is the underlying flow of economic activity that reflects the factors of labor force growth and productivity gains.

### **Outside the Frictionless Economic Model**

Yet, these highly stylized results are within the context of a perfectly functionally smooth economic system. We do not have that perfectly functioning economic system. Instead, our work here has emphasized the existence of partial adjustment mechanisms, imperfect information and the operation of an economy with no real set of “equilibrium” conditions.

Since 2008, easier monetary policy has been the primary means to achieve faster growth and employment in the U.S. economy. Easier monetary policy has produced lower interest rates and helped provide for the basis of improved economic output. The lower interest rates reduced the burden of financing real estate and raised the valuation of both bond and equity assets. Yet, the gains in housing have been less than many anticipated given the decline in interest rates. In part, this has reflected the greater regulatory constraint on lending institutions, which reflects the influence of factors (changing and uncertain credit regulations) not accounted for in a perfectly functioning purely private sector model. Meanwhile, financial markets, especially equity, are said to have climbed a wall of worry. Why?

International capital flows and their impact on asset prices are central to understanding the broader, more global framework that we emphasize would more accurately represent the actual conduct of economic activity.

We focus on several points. First, economic activity reflects the impact of the change in relative forces/prices that mimics Newton’s third law—and the choices households and business makes in response to changes in those forces. Second, the economy is in constant motion, in disequilibrium, and not at an equilibrium point. There is no Aristotle natural state here. As a result, even when the domestic U.S. economy may give an appearance of balance, foreign shocks, such as the 2011 sovereign euro debt crisis or the collapse of oil prices since mid-2014, lead to changes in the domestic U.S. economy (oil drilling/high yield bond valuations). There is a duality of internal/external economic conditions that may move the market.

Another central theme to the analysis is that economic activity does not fully adjust to a new balance point—instead economic activity reflects a series of partial adjustments given the constraints of imperfect information and the frictions of adjustment associated with labor and capital price adjustment. Moreover, as we have previously noted, different economic actors, such as workers and employers, exhibit differential speeds of adjustment for prices/wages and exchange rates and this gives rise to a cyclical character of profits all its own.<sup>3</sup> Finally, the role of

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<sup>2</sup> This reflects the work of Robert Mundell and Marcus Fleming on domestic policy under alternative fixed and flexible exchange rates. See Rudger Dornbusch, “*Open Economy Macroeconomics*,” Basic Books, Inc., New York Chapters 10, 11.

<sup>3</sup> John E. Silvia, “*Corporate Profits: Reward, Incentive and the Standard of Living*,” Sep. 26, 2014, Wells Fargo Economics.

***Easier monetary policy has produced lower interest rates and helped provide for the basis of improved economic output.***

exchange rate expectations remains critical especially in the world of financial assets—equity and bond valuations reflect the expected future, not past, returns for these assets.

**Looking at the World We Have**

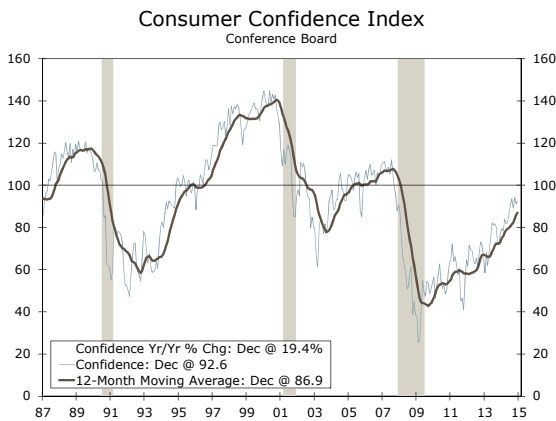
Let's return again to our fundamentals of disequilibrium, dynamic and partial adjustment under conditions of imperfect information, and the importance of expectations in the economy. The entire period of 2005 to the present has been characterized by a sense of disequilibrium in the economy. As the economy has been characterized by a housing bubble was followed by a bust, a long period of persistent high unemployment, a slow housing starts recovery and subpar aggregate income growth. Contrary to the perfectly competitive conditions of economic theory, households and businesses do not have perfect foresight on the effectiveness of monetary/fiscal policy nor the underlying pace of the real economy. As a result, households and businesses have made only a partial adjustment to the change in expectations.

In a repeat of the experience of 2002-2004, the initial monetary policy easing did not lead to an immediate economic recovery. This led many analysts to question the traditional effectiveness of monetary policy as represented in frictionless economic models. In addition, fiscal policy was initially extremely expansionary with the 2009 stimulus program, but a significant share of that program was not well directed in economic impact and much of the program was spread out over time. Again, the impact of policy was less than anticipated. Finally, there was no perfect information about the potential change in the underlying trend growth of the economy as well as the impact of increased regulatory strictures on the financial system. In recent years, the concern about labor force participation and its impact on potential economic growth has come center stage.

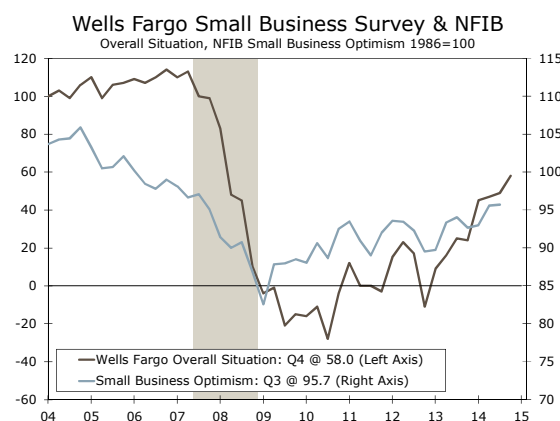
*The concern about labor force participation and its impact on potential economic growth has come center stage.*

Dynamic adjustment is exemplified by the gradual and sometime stop-and-go movements of households and business decision makers. While the economy improved on many fronts, individuals have been hesitant, to buy homes for example, as evidenced by the gradual improvement in consumer confidence (Figure 1). For businesses, confidence surveys indicate that business sentiment is not back to prerecession levels (Figure 2). Both the NFIB and Wells Fargo indices denote a long period of below-average business confidence and only a slow recovery back toward prior heights of business confidence. Finally, policy uncertainty, as illustrated in Figure 3, provides a basis for understanding the lack of follow-through effects from fiscal and monetary policy since 2008.

**Figure 1**



**Figure 2**



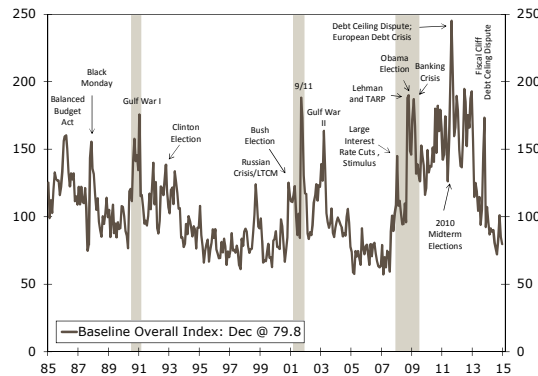
**Source:** The Conference Board, NFIB, Gallup, Wells Fargo Bank, N.A. and Wells Fargo Securities, LLC

Money and credit expansion by the Federal Reserve did lead to a decline in interest rates and an expansion in income, but these patterns did not immediately lead to the expected real economy results. Imbalances persisted; excess unemployment in the labor market, strong capital inflows in the currency market (despite the low interest rates) and a rising dollar (again despite a lower interest rate regime for short-term securities). In a frictionless model, when interest rates decline below the rest of the world, we should witness currency outflows and a weaker currency.

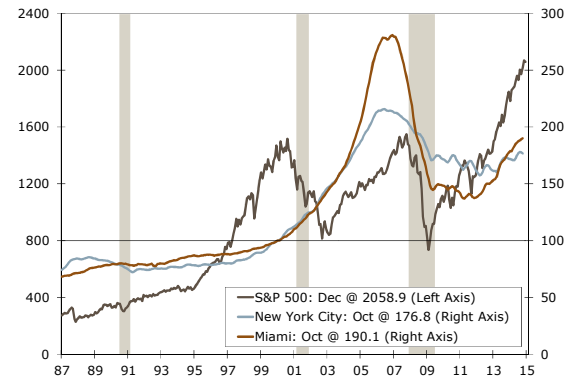
Exchange rate depreciation would reduce the relative price of domestic goods, raise the demand for domestic output and thus national income would expand. This would increase the demand for financial assets (money, equity and bond assets) and thereby alter their respective values. The relative improvement in the balance of trade via exchange rate depreciation raises domestic output and employment.

However, in the United States' case, easier monetary policy was accompanied by lower short-term interest rates as expected, but what was unanticipated were the greater capital inflows and rising currency values. The capital inflows accompanied rising asset valuations for equities, bonds and real estate (Figure 4).

**Figure 3**  
 Index of Economic Policy Uncertainty



**Figure 4**  
 S&P Case-Shiller Home Price Index vs. Equity Prices  
 Home Price Index, Jan. 2000 = 100

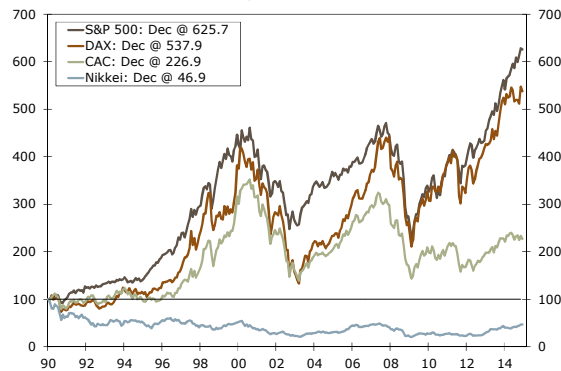


Source: Policyuncertainty.com, Bloomberg LP, S&P Case-Shiller and Wells Fargo Securities, LLC

But in economics, unbalanced forces bring further change—and the past seven years have witnessed a continuous set of unbalanced changes both internally and externally among countries. Whatever depreciation we have witnessed for the euro and Japanese yen has not been accompanied by an economic recovery in each region and has not led to an outperformance of financial assets in each region relative to U.S. financial assets (Figure 5). Easier monetary policy in the U.S. has led to lower interest rates, dollar appreciation, stronger capital inflows and rising asset value for equities, bonds and real estate.

***Easier monetary policy in the U.S. has led to lower interest rates, dollar appreciation, stronger capital inflows and rising asset values.***

**Figure 5**  
 Global Equity Prices  
 Index, Jan. 1990 = 100



Source: Bloomberg LP and Wells Fargo Securities, LLC

### Introducing a New Price to the Analysis: The Role of Exchange Rates

Today, what makes the global influence on asset prices so different is the rapid change in the relative price of domestic and foreign currencies expressed in the exchange rate across numerous countries with significantly different economic policy expectations. The rapid alteration in policy expectations sets up a rapid change in exchange rates given the uncertainty of the pace and character of growth/inflation combinations across nations. These rapid changes and their effect are compounded by the differential speeds of adjustment some analysts have started to note with the North American economies picking up speed, while European and Japanese economies continue to lag. This creates a tension between expectations for differential monetary policies, different fiscal policies, interest rates and different patterns of exchange rates.<sup>4</sup>

Therefore, in the global context, the exchange rates, and expectations of its future values, become an additional price, along with interest rates and inflation that influences economic growth. National growth trends are a function of the interest rate and the real exchange rate and yet, often, the role of the exchange rate is overlooked in terms of its influence on domestic asset prices.

Appreciation of the domestic currency would be expected to reduce aggregate demand for domestic goods while a decline in domestic interest rates leads to a positive impact on domestic demand and output. There is an internal/external duality in interest rates and exchange rates where both factors influence and are influenced by domestic and foreign developments.

For the European and Japanese situations, currency depreciation and lower interest rates did not lead to asset price increases and the aggregate pace of economic growth remains subpar. In contrast, in the U.S. situation, lower rates and currency appreciation accompanied asset price inflation and continued economic growth. Moreover, in 2014 U.S. short-term rates on two- and three-year Treasury debt actually rose and yet equity and real estate asset prices, along with the total return on longer-term Treasury and high grade debt, continued to rise. Meanwhile the dollar continued to appreciate as capital flows have remained positive. However, we must note that the continued appreciation in the U.S. dollar is not necessarily just a function of capital inflows to the United States, but also the large divergence in monetary policy between the Federal Reserve, European Central Bank and Bank of Japan.

To further complicate the issue, domestic U. S. interest rates have not equalized to the global level of interest rates contrary to the theoretical implication that global rates should tend to equalize through capital flows and exchange rates. Instead, recent years have witnessed a persistent gap in interest rates as well as economic growth and a rising dollar.

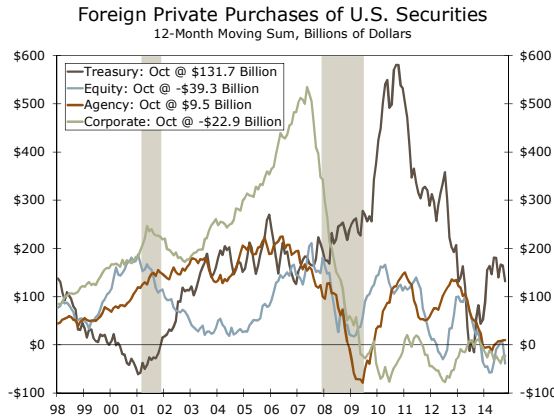
Exchange rate expectations for the future matter a great deal for financial and real asset holders who will react to international differentials in anticipated asset returns adjusted for expected exchange rate depreciation. This observation reinforces the importance of the principal that asset prices today will react to anticipated future differentials in expected returns and changes in the expected movements in exchange rates as well. Asset markets are in constant disequilibrium as analysts must allow for interest rate, exchange rate and asset price adjustments whenever either the domestic or foreign economies deviates from full employment—or from the desired full employment goals of policy makers. During this economic recovery, the linkage of interest rates, exchange rates and capital flows in an integrated world capital market have become a driving influence in the path of asset prices.

Figure 6 provides a picture of the volatility of foreign purchases of U.S. securities. Corporate debt was clearly the favorite prior to the Great Recession, but then the flight to perceived safety supported the move to U.S. Treasury debt. Meanwhile, agency and equity debt exhibits separate patterns of volatility. In Figure 7, foreign private purchases of all U.S. securities is highly volatile in contrast to the relative stability of foreign official purchases, even though it is the volatility of official purchases that receives the lion's share of publicity.

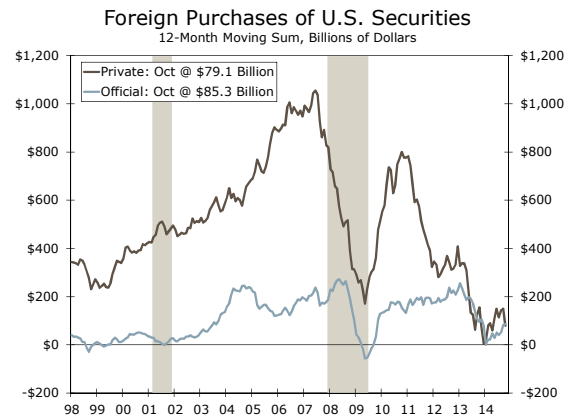
***National growth trends are a function of the interest rate and the real exchange rate.***

<sup>4</sup> "Prepare for the Tremors as Europe and America Drift Apart," Axel Weber, *Financial Times*, June 2, 2014.

**Figure 6**



**Figure 7**

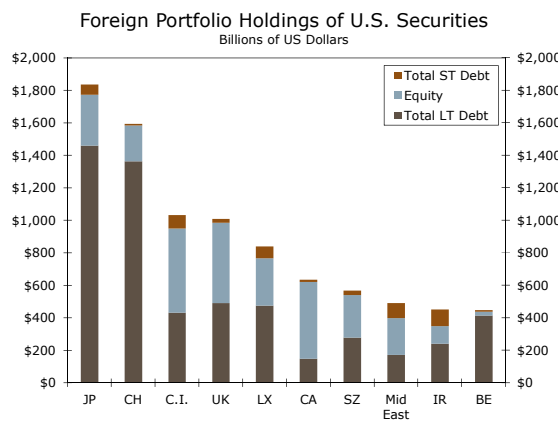


Source: U.S. Department of the Treasury and Wells Fargo Securities, LLC

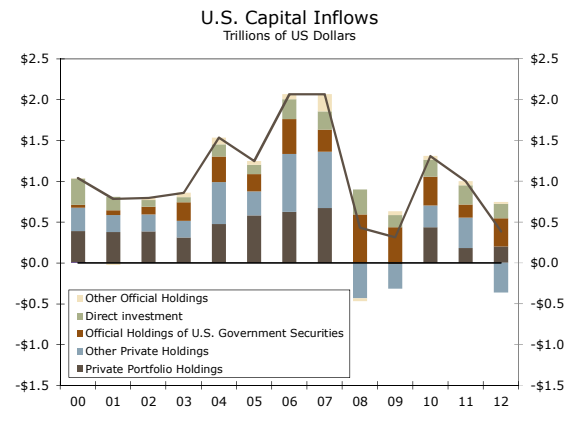
Foreign portfolio holdings of U.S. securities are also a bit surprising. The size of the holdings of long-term debt by Japan and China is expected by many. But for all the other jurisdictions, ex-Belgium, the large share of securities held as equity may be surprising. Places such as the Cayman Islands (C.I.), Canada and the United Kingdom have a greater share of their holdings in equities. The allocations of Switzerland, Luxembourg, and the Middle East are more even.

U.S. capital flows exhibits significant volatility but also a distinct downshift since 2006-2007 and again after 2010 (Figure 9). Private portfolio holdings and other private holdings have diminished since 2007.<sup>5</sup>

**Figure 8**



**Figure 9**



Source: U.S. Department of the Treasury and Wells Fargo Securities, LLC

**The Rising Visibility of Foreign Economic Policy**

Foreign economic policy, more specifically the importance of expectations about that policy, has become an increasingly important channel for driving U.S. asset prices. Changes in expectations of foreign economic policy have become a factor on their own independent of an actual change in policy. Changes in policy expectations act as shocks much the same as any exogenous economic shock such as an oil price spike.

For example, note the recent volatility in expectations of the European Central Bank, where weak responses to an easier policy led to increased expectations for further policy easing.<sup>6</sup> In another

*Changes in expectations of foreign economic policy have become a factor on their own independent of an actual change in policy.*

<sup>5</sup> Jay H. Bryson, Nick Bennenbroek, Zachary Griffiths, "The Structure of U.S. Capital Flows and the Dollar," May 28, 2014 Wells Fargo Economics.

<sup>6</sup> "Weak Demand for Loans Raises Hope for ECB Stimulus," Todd Buell and Brian Blackstone, WSJ Dec. 11, 2014.

recent article, foreign investors were portrayed as piling into U.S. Treasury debt due to the “broad demand for safe government debt amid global turmoil and uneven economic growth.”<sup>7</sup>

The list of economic shocks include changing expectations of fiscal policy in the Eurozone, alterations in Chinese economic goals, and the on again/off again Japan consumption tax along with easing of the Bank of Japan. As evidenced by this litany, foreign economic policy, as well as U.S. domestic economic policy, contains a significant degree of policy uncertainty and thereby these actions, or lack of action, affect not only the pace of economic activity but also the volatility of activity.

**Imperfect Capital Mobility—A Constraint to Equilibrium and an Invitation to Volatility**

Beyond the actions of private and public policy makers, market structure is also a source of frictions and persistent disequilibrium in the economy. Financial regulation, and the consequent market structure from such regulation, limits the flow of capital into countries and/or investment into the various possible set of real and financial assets. These frictions reinforce the message that the realities of the marketplace contrasts with the models of perfectly smooth functioning capital markets that drive many predictions of future asset values.

To begin, many central banks (e.g., Switzerland, China, Japan) take actions to alter the market determination of exchange rates. Second, countries differ by their level of sophistication in their capital markets. For example, sovereign debt is a significant portion of private bank assets in Europe and this led to further complications when such sovereign debt was downgraded and interest rates soared. This further made any extent of economic recovery in Europe more limited. This reinforces the message that the impact of monetary and fiscal policy actions is limited by the character of the marketplace in which such actions occur. Capital flows are clearly limited in cases, such as China, where the currency is not convertible. In cases such as the U.S. and Europe, increasing capital requirements for private banks has the result of redirecting funds away from funding private activity to funding public debts. Along these lines, there remains the legacy of legal risk associated with prior action associated with the 2008-2009 Great Recession. In the marketplace, the existence of all these regulatory induced frictions results in a misallocation of credit away from the allocation that would be determined in the private marketplace and gives rise to dead weight losses in the economy.

**Conclusion**

Asset price movements reflect the framework of an exceedingly complex, imperfect marketplace. Capital flows friction, the uncertainty of future policy actions and differential speeds of adjustment make long-term economic projections, within the context of short-term horizons of the next election—Brazil, India and Italy—enormously difficult. These limited forecast horizons—heavy discounted future returns—would tend to discourage longer-term investment projects. As a result, asset prices would be anticipated to be lower and more volatile in such a context. Moreover, asset prices, the return to capital, labor and financial assets would not tend to equalize across countries. Interest rate differentials would persist and a less efficient allocation of capital across countries would persist over time.

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<sup>7</sup> “*Foreign Investors Pile Into Bonds*,” Min Zeng, WSJ Dec. 15, 2014.

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