Abstracts of Globalization and Monetary Policy Institute

Working Papers Issued from October 2007 through September 2008

No. 1
Is Openness Inflationary? Imperfect Competition and Monetary Market Power

Richard W. Evans

Abstract: Much empirical work has documented a negative correlation between different measures of globalization or openness and inflation levels across countries and across time. However, there is much less work exploring this relationship through structural international models based on explicit microeconomic foundations. This paper asks the question of how the degree of openness of an economy affects the equilibrium inflation level in a simple two-country OLG model with imperfect competition in which the monetary authority in each country chooses the money growth rate to maximize the welfare of its citizens. I find that a higher degree of openness in a country is associated with a higher equilibrium inflation rate. This result is driven by the fact that the monetary authority enjoys a degree of monopoly power in international markets as foreign consumers have some degree of inelasticity in their demand for goods produced in the home country. The decision of the monetary authority is then to balance the benefits of increased money growth that come from the open economy setting with the well-known consumption tax costs of inflation. In addition, I find that the level of imperfect competition among producers within a country is a perfect substitute for the international market power of the monetary authority in extracting the monopoly rents available in this international structure.

No. 2
A Monetary Model of the Exchange Rate with Informational Frictions

Enrique Martinez-Garcia

Abstract: Data for the U.S. and the euro area during the post-Bretton Woods period show that nominal and real exchange rates are more volatile than consumption, very persistent, and highly correlated with each other. Standard models with nominal rigidities match reasonably well the volatility and persistence of the nominal exchange rate, but require an average contract duration above four quarters to approximate the real exchange rate counterparts. I propose a two-country model with financial intermediaries and argue that: First, sticky and asymmetric information introduces a lag in the consumption response to currently unobservable shocks, mostly foreign. Accordingly, the real exchange rate becomes more volatile to induce enough expenditure-switching across countries for all markets to clear. Second, differences in the degree of price stickiness across markets and firms weaken the correlation between the nominal exchange rate and the relative CPI price. This correlation is important to match the moments of the real exchange rate. The model suggests that asymmetric information and differences in price

stickiness account better for the stylized facts without relying on an average contract duration for the U.S. larger than the current empirical estimates.

No. 3
International Trade in Durable Goods: Understanding Volatility, Cyclicality, and Elasticities

Charles Engel and Jian Wang

Abstract: Data for OECD countries document: 1. imports and exports are about three times as volatile as GDP; 2. imports and exports are procyclical, and positively correlated with each other; 3. net exports are countercyclical. Standard models fail to replicate the behavior of imports and exports, though they can match net exports relatively well. Inspired by the fact that a large fraction of international trade is in durable goods, we propose a two-country two-sector model in which durable goods are traded across countries. Our model can match the business cycle statistics on the volatility and comovement of the imports and exports relatively well. In addition, the model with trade in durables helps to understand the empirical regularity noted in the trade literature: home and foreign goods are highly substitutable in the long run, but the short-run elasticity of substitution is low. We note that durable consumption also has implications for the appropriate measures of consumption and prices to assess risk-sharing opportunities, as in the empirical work on the Backus–Smith puzzle. The fact that our model can match data better in multiple dimensions suggests that trade in durable goods may be an important element in open-economy macro models.

No. 4
Cross-Border Returns Differentials

Stephanie E. Curcuru, Tomas Dvorak and Francis E. Warnock

Abstract: Were the U.S. to persistently earn substantially more on its foreign investments ("U.S. claims") than foreigners earn on their U.S. investments ("U.S. liabilities"), the likelihood that the current environment of sizable global imbalances will evolve in a benign manner increases. However, we find that the returns differential of U.S. claims over U.S. liabilities is far smaller than previously reported and, importantly, is near zero for portfolio equity and debt securities. For portfolio securities, we confirm our finding using a separate dataset on the actual foreign equity and bond portfolios of U.S. investors and the U.S. equity and bond portfolios of foreign investors; in the context of equity and bond portfolios, we find no evidence that the U.S. can count on earning more on its claims than it pays on its liabilities. Finally, we reconcile our finding of a near zero returns differential with observed patterns of cumulated current account deficits, the net international investment position, and the net income balance.

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No. 5
Production Sharing and Real Business Cycles in a Small Open Economy

José Joaquín López

Abstract: Production sharing and vertical specialization account for a significant share of trade between developed and developing countries. The Mexican maquiladora industry provides an ideal example of production sharing in a small open economy. The typical "maquila" imports most of its inputs from and exports all its output to the United States. This article tries to determine to what extent production sharing, as in the Mexican maquiladora, can serve as a transmission mechanism of business cycles in small open economies. We utilize a simple, two-sector, small open economy model of real business cycles that incorporates production sharing in the traded sector. The transmission channel of business cycles is introduced in the model via demand shocks to the traded

sector, originated in the United States' manufacturing sector. The model is successful in replicating real business cycles statistics for the maquiladora sector, as well as some of the characteristics of the nontraded sector.

No. 6
Driving Forces of the Canadian Economy: An Accounting Exercise

Simona E. Cociuba and Alexander Ueberfeldt

Abstract: This paper analyzes the Canadian economy for the post-1960 period. It uses an accounting procedure developed in Chari, Kehoe, and McGrattan (2006). The procedure identifies accounting factors that help align the predictions of the neoclassical growth model with macroeconomic variables observed in the data. The paper finds that total factor productivity and the consumption–leisure trade-off—the productivity and labor factors—are key to understanding the changes in output, labor supply, and labor productivity observed in the Canadian economy. The paper performs a decomposition of the labor factor for Canada and the United States. It finds that the decline in the gender wage gap is a major driving force of the decrease in the labor market distortions. Moreover, the milder reduction in the labor market distortions observed in Canada, compared to the U.S., is due to a relative increase in effective labor taxes in Canada.

No. 7
Accounting for Persistence and Volatility of Good-Level Real Exchange Rates: The Role of Sticky Information

Mario J. Crucini, Mototsugu Shintani and Takayuki Tsuruga

Abstract: Volatile and persistent real exchange rates are observed not only in aggregate series but also on the individual good-level data. Kehoe and Midrigan (2007) recently showed that, under a standard assumption on nominal price stickiness, empirical frequencies of micro price adjustment cannot replicate the time-series properties of the law-of-one-price deviations. We extend their sticky price model by combining good-specific price adjustment with information stickiness in the sense of Mankiw and Reis (2002). Under a reasonable assumption on the money growth process, we show that the model fully explains both persistence and volatility of the good-level real exchange rates. Furthermore, our framework allows for multiple cities within a country. Using a panel of U.S.–Canadian city pairs, we estimate a dynamic price adjustment process for each 165 individual goods. The empirical result suggests that the dispersion of average time of information update across goods is comparable to that of average time of price adjustment.

No. 8
How Should Central Banks Define Price Stability?

Mark A. Wynne

Abstract: It is now generally accepted that the primary objective of central banks should be the maintenance of price stability. This paper considers the question of how central banks should define price stability. I address three specific questions. First, should central banks target broad or narrow measures of inflation? Second, should central banks target headline or core measure of inflation? And third, should central banks define price stability as prevailing at some positive measured rate of inflation?

No. 9
Country Portfolios in Open Economy Macro Models

Michael B. Devereux and Alan Sutherland

Abstract: This paper develops a simple approximation method for computing equilibrium portfolios in dynamic general equilibrium open economy macro models. The method is widely applicable, simple to implement, and gives analytical solutions for equilibrium portfolio positions in any combination or types of asset. It can be used in models with any number of assets, whether markets are complete or incomplete, and can be applied to stochastic dynamic general equilibrium models of any dimension, so long as the model is amenable to a solution using standard approximation methods. We first illustrate the approach using a simple two-asset endowment economy model, and then show how the results extend to the case of any number of assets and general economic structure.

No. 10

Vehicle Currency

Michael B. Devereux and Shouyong Shi

Abstract: While in principle, international payments could be carried out using any currency or set of currencies, in practice, the U.S. dollar is predominant in international trade and financial flows. The dollar acts as a "vehicle currency" in the sense that agents in nondollar economies will generally engage in currency trade indirectly using the U.S. dollar rather than using direct bilateral trade among their own currencies. Indirect trade is desirable when there are transactions costs of exchange. This paper constructs a dynamic general equilibrium model of a vehicle currency. We explore the nature of the efficiency gains arising from a vehicle currency and show how this depends on the total number of currencies in existence, the size of the vehicle currency economy, and the monetary policy followed by the vehicle currency's government. We find that there can be very large welfare gains to a vehicle currency in a system of many independent currencies. But these gains are asymmetrically weighted toward the residents of the vehicle currency country. The survival of a vehicle currency places natural limits on the monetary policy of the vehicle country.

No. 11

Globalization and Monetary Policy: An Introduction

Enrique Martinez-Garcia

Abstract: Greater openness has become an almost universal feature of modern, developed economies. This paper develops a workhorse international model and explores the role of standard monetary policy rules applied to an open economy. For this purpose, I build a two-country DSGE model with monopolistic competition, sticky prices, and pricing-to-market. I also derive the steady state and a log-linear approximation of the equilibrium conditions. The paper provides a lengthy explanation of the steps required to derive this benchmark model and a discussion of (a) how to account for certain well-known anomalies in the international literature and (b) how to start "thinking" about monetary policy in this environment.

No. 12

Financial Globalization, Governance, and the Evolution of the Home Bias

Bong-Chan Kho, René M. Stulz and Francis E. Warnock

Abstract: Standard portfolio theories of the home bias are disconnected from corporate finance theories of insider ownership. We merge the two into what we call the optimal ownership theory of the home bias. The theory has the following components. In countries with poor governance, it is optimal for insiders to own large stakes in corporations and for large shareholders to monitor insiders. Foreign portfolio investors will exhibit a large home bias against such countries because their investment is limited by the shares held by insiders (the "direct effect" of poor governance) and domestic monitoring shareholders ("the indirect effect"). Foreigners can also enter as foreign direct investors; if they are from countries with good governance, they have a comparative advantage as insider monitors in countries with poor governance, so that the relative importance of foreign direct investment in total foreign equity investment is negatively related to the quality of governance. Using two datasets, we find strong evidence that the theory can help explain the evolution of the home bias. Using country-level U.S. data, we find that, on

average, the home bias of U.S. investors toward the 46 countries with the largest equity markets did not fall during the past decade, but it decreased the most toward countries in which the ownership by corporate insiders decreased, and the importance of foreign direct investment fell in countries in which ownership by corporate insiders fell. Using firm-level data for Korea, we find evidence of the additional indirect effect of poor governance on portfolio equity investment by foreign investors.

No. 13
Globalization, Domestic Inflation and Global Output Gaps: Evidence from the Euro Area

Alessandro Calza

Abstract: This paper tests whether the proposition that globalization has led to greater sensitivity of domestic inflation to the global output gap (the "global output gap hypothesis") holds for the euro area. The empirical analysis uses quarterly data over the period 1979–2003. Measures of the global output gap using two different weighting schemes (based on PPPs and trade data) are considered. We find little evidence that global capacity constraints have either explanatory or predictive power for domestic consumer price inflation in the euro area. Based on these findings, the prescription that central banks should specifically react to developments in global output gaps does not seem to be justified for the euro area.

No. 14
The Effect of Trade with Low-Income Countries on U.S. Industry

Raphael Auer and Andreas M. Fischer

Abstract: When labor-abundant nations grow, their exports increase more in labor-intensive sectors than in capital-intensive sectors. We utilize this sectoral difference in how exports are affected by growth to identify the causal effect of trade with low-income countries (LICs) on U.S. industry. Our framework relates differences in sectoral inflation rates to differences in comparative-advantage-induced import growth rates and abstracts from aggregate fluctuations and sector-specific trends. In a panel covering 325 manufacturing industries from 1997 to 2006, we find that LIC exports are associated with strong downward pressure on U.S. producer prices and a large effect on productivity. When LIC exporters capture 1 percent U.S. market share, producer prices decrease by 3.1 percent, which is nearly fully accounted by a 2.4 percent increase in productivity and a 0.4 percent decrease in markups. We also document that while LICs on average find it easier to penetrate sectors with elastic demand, the price and productivity response to import competition is much stronger in industries with inelastic demand. Overall, between 1997 and 2006, the effect of LIC trade on manufacturing PPI inflation was around 2 percentage points per year, far too large to be neglected in macroeconomic analysis.

No. 15
Variety, Globalization, and Social Efficiency

W. Michael Cox and Roy J. Ruffin

Abstract: This paper puts recent work on the benefits of variety into the context of a more complete quantitative analysis of the Dixit-Stiglitz-Krugman model of monopolistic competition. We show how the gains from globalization are reflected in the increase in variety and the exploitation of economies of scale, and that the social efficiency question is quantitatively insignificant. These results follow from examining a Bertrand–Nash equilibrium that allows for a finite number of varieties to affect the elasticity of demand facing each firm. We develop a precise expression for per capita real income with any number of sectors where globalization increases productivity through economies of scale.

No. 16

Technical Note on 'The Real Exchange Rate in Sticky Price Models: Does Investment Matter?'

Enrique Martinez-Garcia and Jens Søndergaard

Abstract: This technical note is developed as a mathematical companion to the paper "The Real Exchange Rate in Sticky Price Models: Does Investment Matter?" (Institute Working Paper no. 17). It contains three basic calculations. First, we derive the equilibrium conditions of the model. Second, we compute the zero-inflation, zero-trade balance (deterministic) steady state. Third, we describe the log-linearization of the equilibrium conditions around the deterministic steady state. Simultaneously, we explain the system of equations that constitutes the basis for the paper to broaden its scope. Commentary is provided whenever necessary to complement the model description and to place into context the assumptions embedded in our DSGE framework.

No. 17

The Real Exchange Rate in Sticky Price Models: Does Investment Matter?

Enrique Martinez-Garcia and Jens Søndergaard

Abstract: This paper re-examines the ability of sticky-price models to generate volatile and persistent real exchange rates. We use a DSGE framework with pricing-to-market akin to those in Chari et al. (2002) and Steinsson (2008) to illustrate the link between real exchange rate dynamics and what the model assumes about physical capital. We show that adding capital accumulation to the model facilitates consumption smoothing and significantly impedes the model's ability to generate volatile real exchange rates. Our analysis, therefore, caveats the results in Steinsson (2008), who shows how real shocks in a sticky-price model without capital can replicate the observed real exchange rate dynamics. Finally, we find that the CKM (2002) persistence anomaly remains robust to several alternative capital specifications, including set-ups with variable capital utilization and investment adjustment costs (see, e.g., Christiano et al., 2005). In summary, the PPP puzzle is still very much alive and well.

No. 18

Some Preliminary Evidence on the Globalization–Inflation Nexus

Sophie Guilloux and Enisse Kharroubi

Abstract: The aim of this paper is to evaluate the impact of globalization, if any, on inflation and the inflation process. We estimate standard Phillips curve equations on a panel of OECD countries over the last 25 years. While recent papers have concluded that globalization has had no significant impact, this paper highlights that trying to capture globalization effects through simple measures of import prices and/or imports to GDP ratios can be misleading. To do so, we try to extend the analysis following two different avenues. We first separate between commodity and noncommodity imports and show that the impact on inflation of commodity import price inflation is qualitatively different from the impact of noncommodity import price inflation, the former depending on the volume of commodity imports while the latter being independent of the volume of noncommodity imports. This first piece of evidence highlights the role of contestability and the insufficiency of trade volume statistics to properly describe the impact of globalization. This leads us to adopt a more systematic approach to capture the contents and not only the volume of trade. Focusing on the role of intra-industry trade, we provide preliminary evidence that this variable can account (i) for the low pass-through of import price to consumer price and (ii) for the flattening of the Phillips curve, i.e., the lower sensitivity of inflation to changes in output gap. We hence conclude that different facets of globalization, especially changes in the nature of goods traded, can be an important channel through which globalization affects the inflation process.

No. 19

Default and the Maturity Structure in Sovereign Bonds

Cristina Arellano and Ananth Ramanarayanan

Abstract: This paper studies the maturity composition and the term structure of interest rate spreads of government debt in emerging markets. We document that in Argentina, Brazil, Mexico, and Russia, when interest rate spreads rise, debt maturity shortens and the spread on short-term bonds is higher than on long-term bonds. To account for this pattern, we build a dynamic model of international borrowing with endogenous default and multiple maturities of debt. Short-term debt can deliver higher immediate consumption than long-term debt; large long-term loans are not available because the borrower cannot commit to save in the near future toward repayment in the far future. However, issuing long-term debt can insure against the need to roll over short-term debt at high interest rate spreads. The trade-off between these two benefits is quantitatively important for understanding the maturity composition in emerging markets. When calibrated to data from Brazil, the model matches the dynamics in the maturity of debt issuances and its comovement with the level of spreads across maturities.

No. 20

An International Perspective on Oil Price Shocks and U.S. Economic Activity

Nathan S. Balke, Stephen P. A. Brown and Mine K. Yücel

Abstract: The effect of oil price shocks on U.S. economic activity seems to have changed since the mid-1990s. A variety of explanations have been offered for the seeming change—including better luck, the reduced energy intensity of the U.S. economy, a more flexible economy, more experience with oil price shocks and better monetary policy. These explanations point to a weakening of the relationship between oil prices shocks and economic activity rather than the fundamentally different response that may be evident since the mid-1990s. Using a dynamic stochastic general equilibrium model of world economic activity, we employ Bayesian methods to assess how economic activity responds to oil price shocks arising from supply shocks and demand shocks originating in the United States or elsewhere in the world. We find that both oil supply and oil demand shocks have contributed significantly to oil price fluctuations and that U.S. output fluctuations are derived largely from domestic shocks.