WORLD ECONOMY AND FINANCE

Findings from The World Economy and Finance Programme
Promoting and supporting world-class theoretical, empirical and policy-oriented research.

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Few areas of our society have received the same amount of focus and scrutiny as the world economy and finance over the last couple of years. The collapse of the financial markets and the need for additional fiscal support from governments worldwide has not only led to a call for new policies and practices, but also overturned previously accepted wisdom about risk, behaviour and self-regulation in a free market.

In today’s global financial market an international approach is crucial to understand or manage the flow of capital across borders and continents. As the 2008 collapse starkly demonstrated, no country is protected against market fluctuations in an open economy. We do not have the luxury of merely focusing on domestic matters; in a global economy we also need a global point of view.

Gaining an understanding of the economy on a worldwide scale is a daunting challenge. We are entering partly new and uncharted territory, and there is a clear need for more knowledge. It is therefore very timely to present findings from the ESRC’s World Economy and Finance Research Programme, which will provide an invaluable contribution to the evidence base underpinning fiscal policy and practice both in the UK and internationally.

As this report shows, a wide range of research areas have been included, from market stability, regulation and behaviour through to market growth and development, poverty reduction in poor countries and macroeconomics. The research programme has included input from many disciplines – not only economics and finance, but also sociology, law, political science, philosophy, history, geography and management. This multidisciplinary approach reflects how the economy is not merely a purely financial matter, but a key area affecting all parts of society. By contributing to a healthy economy I believe these findings are important for the prosperity and wellbeing of us all.
Introduction

PROFESSOR JOHN DRIFFILL, DIRECTOR, WORLD ECONOMY AND FINANCE PROGRAMME

In 2003, when the Economic and Social Research Council World Economy and Finance Research Programme was conceived, the world was a different place than it is now, at the end of 2009. The ‘Great Moderation’ was still under way. Most developed economies seemed to have returned to low inflation and rapid, steady economic growth. Governments were still able to claim that they had vanquished the business cycle. Alan Greenspan the then Chairman of the Federal Reserve of the United States appeared to have headed off a downturn in the US economy by vigorously cutting interest rates in 2001 after the collapse of the dot-com boom. Finance was riding high; achieving miracles around the world; bringing cheap mortgages and the possibility of home ownership to many. China had established its record of rapid growth and amazing export performance, accumulating large foreign exchange reserves in the process. The other BRICs had begun to attract attention. Who would have guessed that the party was to come to such a spectacular end in 2007-08; with financial crisis in the United States, Britain, and Europe; and the global financial system rescued from total meltdown only by unprecedented government intervention?

Not all was rosy in 2003. There had been a succession of financial crises – East Asia 1997, Russia 1998, Argentina 2001 – and the collapse of the dot-com bubble. The invasion of Iraq in March 2003 had sent stock markets spiralling downwards. There was concern about the US deficit and Chinese surpluses – the global imbalances, and where they might lead. There was already concern that house prices may contain bubbles, that the Basel II capital adequacy requirements on the banking system were causing excessive volatility and instability.

A child of this era, the programme was given the remit of promoting and supporting ‘world-class theoretical, empirical and policy-oriented research focusing on the inter-relationship between finance and the world economy.’ This was an enormously wide brief. Two sub-divisions were spelled out; the first ‘to examine ways financial markets and financial policies influence major global issues, such as poverty, development, growth and transition’; the second ‘to analyse policy issues in a variety of institutional and cultural settings, in an era of low inflation, increasingly integrated financial markets, changing demographics and trade patterns’. The first of these directs research to the problems of developing countries, emerging markets, and transition economies; the second to problems of the developed world.

The 26 research projects that made up the programme were clustered around a number of key themes and brought together research from many perspectives: economics, finance, geography, law, sociology, political science, history, management, philosophy. It has fostered multi or interdisciplinary collaborations; and a number of themes run through it, cutting across disciplines.

Alongside the 26 projects from the programme there have been over 50 events and a diverse range of networking and knowledge transfer activities. Throughout the lifetime of the programme engagement of policymakers, economists, and governments with the research has been an important part of the programme’s activities.

The programme has been an enormous and wide-ranging enterprise. This report explores and highlights some of the work of the programme and gives a broad overview of the findings.
Some of our key findings and impacts are:

- The combination of Basel II capital adequacy requirements and the adoption of mark-to-market accounting procedures greatly increased the volatility of financial markets, as Tobias Adrian and Hyun Song Shin demonstrated in a paper *Liquidity and Leverage*, first presented at the Bank for International Settlements in June 2007, well before the causes and consequences of the credit crunch were generally understood.


- Research by Alan Sutherland and Michael Devereux has developed powerful methods for modelling international portfolios of financial assets and liabilities. Greatly strengthening the analysis of, among other things, global imbalances, effects of risk and returns on capital flows, and volatility of exchange rates. The methods will be taken up widely within the research community.

- The ‘legal origins hypothesis’ has been very influential as an explanation of why some countries have grown faster than others. But the data that has been used to support it is coarse. A vastly improved data set has been compiled (by Simon Deakin and his co-workers), giving the evolution year by year of hundreds of indices of the legal system. This will provide an enormously valuable resource for research in coming years.

Following the global financial crisis of 2007-08, mired in a deep recession, public finances barely under control; economies around the world face many uncertainties. The research and findings from the World Economy and Finance Research Programme can and have been used to inform and influence economic policy, and contribute to the debate on financial markets, globalisation and the economic downturn. Most importantly, they will make lasting contributions to the body of knowledge on the ways that finance affects and is affected by economic growth, business cycles, and international development.
Financial Markets
The scale of the financial collapse that hit in 2007 and 2008, and the subsequent bail-outs, is unprecedented. The recession that has followed is said to be the worst since the 1930s. It has been analysed intensively over the last two years, and there is a widely agreed diagnosis of what went wrong. Many factors converged to make it possible. The ‘great moderation’ meant that inflation and unemployment were low and growth high from the mid 1990s until 2007. Chinese growth – more than eight per cent per head annual growth of real incomes averaged over the period since 1978, according to official figures – gave strength to the supply side miracle in the developed countries. It fostered low inflation. High Chinese exports and savings – around half of national income – produced the Chinese current account surplus and allowed the United States to run a current account deficit, borrowing massively from China and other surplus countries: the much discussed ‘global imbalances’. The Chinese savings, which became the Chinese export surplus, were invested in US Treasury bills. Banks in the United States looking for returns on their assets turned to mortgages. The US government encouraged sub-prime loans to wide home ownership. Lenders developed ways of securitising loans and selling them on – the ‘originate and distribute’ model of bank behaviour. The financial regulators were exercising a light touch on institutions. The new system of capital adequacy requirements was refined and emerging as ‘Basel II’. With the benefit of hindsight, the cause of the accident seems plain enough. At the opening of the new academic building at the London School of Economics, the Queen innocently asked if no-one had noticed that all this was happening. The answers she received at the time were less than convincing. While some saw it coming, their polite notes of caution were drowned out in the general euphoria of the boom years.

Charles Goodhart and colleagues, working on Stability of the Global Financial System: Regulation and Policy Response were early critics of the new regulatory regime for banks introduced during the 2000s. They identified the tendency of the Basel II capital adequacy requirements to make financial markets more volatile and pro-cyclical. Their research followed up on this developing measures of financial fragility.

In a very striking and much-cited paper, Liquidity and Leverage (2007), Tobias Adrian (Federal Reserve Bank of New York) and Hyun Song Shin (London School of Economics, now Princeton University) uncovered from close scrutiny of balance sheet data (data that banks had to make public in the course of satisfying regulatory requirements) how the five New York investment banks had followed a policy of increasing their leverage during years when asset prices rose, and cutting it back when prices fell. They then demonstrated that this was a rational response to the combination of the Basel II capital adequacy requirements and mark-to-market accounting rules that had recently come into effect. These banks were borrowing heavily to invest in assets in the boom years, and selling them off in the bust. The effect of their collective activities was to increase the swings in asset prices. This paper was presented in

June 2007, long before the rescue of Bear Stearns and the collapse of Lehman Brothers in 2008. It is noticeable that none of the five investment banks at the centre of the study – Bear Stearns, Goldman Sachs, Lehman Brothers, Merrill Lynch, and Morgan Stanley – now survives in its original form, if at all.

Justin O’Brien and colleagues took as their starting point the consequences of the Enron scandal which broke in 2001, and the subsequent passage of the Sarbanes-Oxley act in 2002. Their research Regulatory Regime Change in World Financial Markets: The Case of Sarbanes-Oxley explored the effects of the global reach of US regulations on corporate governance. They argue that a diffused regulatory environment created perverse incentives, and minimised the capacity of the legislation to achieve its stated goals. The legislation was effectively an exercise in political symbolism, creating the illusion but not the reality of robust oversight. Justin O’Brien comments: “The recent global banking crisis reveals continued deficiencies in the way regulatory regimes contend with corporate governance and accountability mechanisms within individual institutions. It highlights a crisis of confidence in the rationale and structure of financial regulation itself. The policy challenge is to recalibrate corporate governance and regulatory oversight across various regulatory regimes in ways that enhance innovation while ensuring the integrity and security of local economies. It requires the dynamic collaboration and integration of reform efforts alongside the structured development of positive-reinforcing norms on a global scale. In this regard, it is essential that regulatory reform addresses first order normative questions: not how to regulate but why.”

Prominent among the culprits for the financial crisis has been the theory of efficient financial markets. It provided intellectual support for the light-touch regulatory regimes of the 1990s and 2000s. Financial markets were supposed to be populated by rational agents, able to compute all the risks and returns of all the stocks, bonds, currencies, and derivatives they trade. Prices of financial assets should reflect all the publicly available information about their future dividends or coupons. There are no bubbles in this world: prices are a reflection of fundamentals. The crisis is a stark reminder that, from time to time, if not all the time, the markets seem a long way from this ideal. They are prone to bouts of irrational exuberance, as Robert Shiller (Yale University) called it. Everyone wants to get on the bandwagon as prices rocket. And a proliferation of theories explains why unbelievably high stock markets are here to stay: there is less risk in the new world of the Great Moderation; the price of risk has fallen; markets are now better at diversifying it away; the world economy will grow faster now that China is on board; and so on. At other times, panic sets in and markets tank. Mervyn King, Governor of the Bank of England remarked that the toxic assets on banks’ balance sheets, that caused the inter-bank lending markets to dry up in September 2008 and nearly brought down the global financial system, might well be worth a lot more than the then market price, if someone could afford to keep them until they matured.
One response is a call for more research that looks into behaviour of people working in financial markets, to find out what they actually do, rather than just theorising about it from an ivory tower. Antonio Guarino and Steffen Huck have done, inter alia, in their work on Financial Contagion: An Experimental Analysis, in experiments using financial market professionals they put subjects in a simulated market and ask them to devise trading strategies that respond to as yet unseen pieces of information ('signals') about stock prices. In a world where in theory herding should not occur most people generally do not, it turns out. But some do. In a world where herding theoretically might occur, people do it, but less often than theory predicts. These results support doubt about simple models of rational behaviour.

Hamid Sabourian and Daniel Sgroi, in Herding in Financial Markets have taken a different tack, showing that in theory there are situations in which following the herd would be the rational thing to do, even though superficially it might not look as though it is. Their experiments on real people have confirmed the view that for the most part, but not always, people act rationally: when following the herd is rational, people do it; when it isn’t, they don’t.

It might be hoped that this research would neatly expose the fact of people not behaving like rational economic man, and also suggest an alternative theory that does explain and summarise how people actually behave. Evidently things are not so simple. There remains evidence of widespread rationality. Unsurprising, perhaps; the theory of rational behaviour would not have survived so long without its having some support in fact. It is not merely a case of scholars clinging on to a core belief in the face of overwhelming evidence against it, even though they are unlikely to let it go without overwhelming support for an alternative.

The recent global banking crisis reveals continued deficiencies in the way regulatory regimes contend with corporate governance
Finance and Growth
Until 2007, when the financial crisis broke, there was a strong view that Anglo-Saxon highly liberalised financial markets, with light-touch regulation, were good for economic growth. It was contrasted with the model of more tightly regulated financial markets, as represented by the social-market model of continental Europe, or Japan’s corporatist arrangements. Both Germany and Japan have developed since 1945 with heavy reliance on banks providing finance, including long-term finance, to firms. In the United States and the United Kingdom, stock and bond markets have played a bigger role. The US and the UK are the countries whose financial sectors have grown the biggest, and from which most of the recent financial innovations have sprung. The Japanese economy has stalled since the property bubble burst at the end of the 1980s, and deflation persists there to this day. Germany has had high unemployment since the 1980s; the unemployment problem of East Germany has not been solved; and growth of real incomes has been slow. For many years Germany was tagged with Euro-sclerosis. None the less, both Germany and Japan remain among the richest countries in the world. A quick look at recent history does not give a clear indication which is the better financial system, bank- or market-based, or whether a highly developed financial system is better than a rudimentary one.

There has been a long-running controversy in economics between the view (supported by Walter Bagehot\(^1\) and J R Hicks\(^2\)) that finance causes or enables growth, and those who believe that it merely follows (among them Joan Robinson – “where enterprise leads, finance follows” – and Robert Lucas). An enormous literature has developed on the subject in recent years, and the predominant view, expressed by Ross Levine in a 1997 survey article\(^5\), is that development of financial markets causes growth. In Ross Levine’s words: “A growing body of work would lead even most sceptics towards the view that the development of financial markets and institutions is a critical and inextricable part of the growth process and away from the view that the financial system is an inconsequential side-show, responding passively to economic growth and industrialisation.”

A prominent position is that the origins of a country’s legal...
system has a significant effect on its growth, in conjunction with measures of the development of its financial markets, because different legal systems provide different levels of protection for small shareholders and creditors in financial markets, and affect the willingness of people to invest and lend, and so affect the ability of the markets to channel funds efficiently from savers to borrowers. The work of La Porta, Lopez-de-Salinas, Shleifer and Vishny has promoted this viewpoint vigorously. However, much of the research that supports this theory uses very crude measures of ‘legal origins’, which do not do justice to its multi-faceted nature, or the way shareholder and creditor protection has changed over the course of time.

Simon Deakin and his colleagues have made enormous and highly valuable strides towards remedying this shortage of good data in their research on Law, Finance and Development. They have gathered data on 25 countries on shareholder, creditor protection, and labour law, for the period 1995-2006. In addition, they have compiled much more detailed datasets on five countries, using a longer list of indicators, for the period 1970 to 2005. In each case they have tracked the changes over the course of time in each one of a very large number of numerical indices that measure many detailed aspects of the financial markets in each of these countries. This definitive ‘leximetric’ data source will be an immensely valuable resource for researchers in the coming years. Indeed it has already been used and cited in published research by a number of authors.

A practical effect of this research will be on the policies for legal and regulatory reforms recommended to developing countries by the World Bank. The ‘legal origins hypothesis’ has exerted powerful influence on the views of the Bank, and its Doing Business Reports are blueprints for future legal and regulatory reform in developing and emerging economies. There is good evidence that they influence reform efforts across the world. It is thus of utmost importance that the premises and methodology of the legal origins hypothesis are carefully assessed and challenged. While economists, finance experts and policymakers have taken up the legal origins hypothesis with enthusiasm, it has been largely dismissed by legal scholars who view its assumptions about law and legal change as naive and misguided. This research has produced a much more realistic portrayal of legal systems, and advances the debate about comparative corporate governance.

The question of the relation between the degree of development of financial markets and economic growth is taken up by Panicos Demetriades and colleagues in *National and International Aspects of Financial Development*. The research examined the mechanisms and channels of financial development; and their effectiveness in promoting economic growth. They used analytical and empirical methods and data, and studied various aspects of international financial governance, drawing on economics, finance, political science and law. The research was conducted in collaboration with Stijn Claessens (International Monetary Fund), Geoffrey Underhill (University of Amsterdam), Badi Baltagi (University of Syracuse) and Chenggang Xu (recently London School of Economics, now University of Hong Kong). The project had two complementary themes. The first one relates to the sources and effectiveness of financial development, with evidence from both macro and micro data, with the latter focusing mainly on the economy of China. The second theme relates to institutional aspects of the global financial system and contains approaches from political science as well as economics.

Many of the findings from this work challenge widely held, neoclassical, views on financial development and economic growth. A novel model of banking that they propose predicts that the share of government-owned banks is higher in countries with weaker regulatory institutions and which have experienced banking crises in the past. Premature attempts to privatise government-owned banks before an appropriate institutional infrastructure is in place may result in financial disintermediation and banking crises instead of additional financial development and growth.

In further research to be carried out from 2009 onwards, Demetriades, Deakin and their colleagues will work together testing more ideas on finance and growth making use of the remarkable datasets that Deakin’s research has generated.
Economic Development
Although there has been a welcome increase in the pace of growth in the developing world in the last 20 years, not only in China and India, but also among African countries, income levels remain very low, and many countries have not yet taken off. It is still a mystery why some countries grow and others do not, despite advances in research trying to understand the growth process. The quality of institutions – markets, rule of law, property rights, public administration, corruption, infrastructure, and education – are believed to be of primary importance. Meanwhile they are buffeted by short-term shocks. Developing countries, especially the poorest, remain hugely vulnerable to external shocks, particularly those caused by volatility in world prices for oil and other primary commodities, in climatic conditions, in aid flows and, increasingly, in private capital flows. In many developing countries central banks and the fiscal authorities are still struggling to define coherent strategies capable of supporting the efficient macroeconomic management of risk and volatility.

Weak Property Rights

Economic growth depends on an economy’s ability to attract profitable investment. Secure and complete property rights have always been regarded as essential to well-functioning market economies, though this view is challenged by the recent experience of China, where rapid growth has flourished despite their absence, an issue that Scott Lash and colleagues pursue in their work, detailed on page 16. Weak property rights have bedevilled many attempts to get out of under-development. When property rights are weak, it is not so obvious that moves towards more liberal markets will have the desired effect. Colin Rowat and Jayasri Dutta explore this in their work on **Weak Property Rights: Financial Markets and Development**. They consider first what the consequences of market liberalisation might be, when property rights are weak, and, second, how might property rights arise from weak institutions. Their theories use optimal control techniques and differential game theory. They interviewed economists at the World Bank and International Monetary Fund. The World Bank’s Governance Matters IV data
show that countries with poor regulatory quality in the 1990s (a proxy for liberalisation) improved to 2004, while those with initially poor rule of law (a proxy for strength of property rights) deteriorated over that same period. The research shows that a small population protects a country better from the tragedy of the commons than does a large one. Resources are still stolen, but each agent is large enough to enjoy some of the gains to conservation. While capital markets help society by allowing saving for rainy days, they also increase the appeal of stripping resources out of the country. Rowat and Dutta have developed simple models of ‘pillage’ and of exchange and pillage in order to investigate the theoretical foundations of property rights. Among their contributions is an algorithm for solving a pillage game with three agents. Models of pillage are applicable to democracies, whose elections reveal the power of coalitions. They force a reconsideration of the first and second fundamental welfare theorems: when property rights are weak, the ability to trade may not yield efficiency; similarly, a government’s ability to redistribute resources in pursuit of equity is constrained by the coalition that it can assemble to back its policies. Therefore, when strong property rights are not simply assumed, weak rights alter fundamental results about the ability of markets to deliver equitable or efficient outcomes.

An issue related to weak property rights in poor countries is the tendency for some development aid to come with strings attached, of a kind that might undermine a country’s property rights, or other rights. In his work on project finance, Sheldon Leader in Transnational Investment, Human Rights and Sustainable Development observed that requirements in transnational investment agreements limit governments’ capacity building, preventing the effective implementation of environmental standards and human rights obligations and therefore jeopardise the long-term development process.

Project finance is a particular type of investment strategy in which the lender looks primarily to the revenue generated by a single project both as the source of repayment and as security for the exposure. One or more project sponsors set up a project company or Special Purpose Vehicle (SPV), a separate company that owns the asset of the project: eg a pipeline. The sponsor will hold the controlling equity in the SPV, while the lenders will provide a loan to the SPV without recourse to the sponsor’s assets. Internationally recognised human rights and environmental standards can be used as benchmark in order to investigate the social impacts of the project finance. Sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs. Leader and colleagues undertook case studies on Ghanaian gold mining and Uruguayan paper mills. They made a set of recommendations: there is a need to strengthen project sponsor accountability to lenders in the event of failure to meet Equator and/or International Finance Corporation (IFC) standards; to strengthen project sponsor accountability to host state and to individuals or groups of victims when SPVs fail to meet their obligations; and to allow host states to change laws and regulations to meet their international social and environmental obligations. They have also made proposals for codes of practice to provide for: guidance to lenders and sponsors so that they can better cope with the effect of stopping or slowing the speed of the project construction, in order to prevent damage occurring; earlier consultation with lenders and contractors about project standards and schedules for completion of work; making compulsory the respect of Equator/IFC standards in order to be eligible for insurance against certain commercial losses; greater attention paid to possible moral hazard arising from project insurance; social and environmental impacts of projects to be taken into greater account by rating agencies specialising in project finance.
Commodity Price Volatility

For many low income countries, especially those in Sub-Saharan Africa, commodity dependence remains as it was in the 1970s. Commodity price volatility is damaging economically and politically. Furthermore, while discoveries of natural resources should be beneficial, they are too often harmful, as in the case of the ‘Dutch disease’. Paul Collier and colleagues *Macroeconomic Risks in Low Income Countries: Institutions and Policies* find that there is a ‘natural resource curse’, ie natural-resource-abundant countries tend to grow slower than resource-scarce countries. Commodity booms have positive short-term effects on output, but ‘high-rent’, non-agricultural commodities have adverse long-term effects. Their results are based on data for many countries over the period 1963 to 2003. How can these bad effects be avoided? Having sufficiently good institutions is one answer. Policies that enhance the flexibility of economies in response to shocks are good also. However, without sufficiently well developed political structures, electoral competition is harmful in countries rich in natural resources.

This research by Paul Collier within the World Economy and Finance Research Programme contributes to his very successful recent book, *The Bottom Billion*.

Monetary Policy in Low-Income Countries

Research on *Macroeconomic Risks in Low Income Countries: Institutions and Policies* with Paul Collier, Christopher Adam and David Vines has also explored the properties of monetary, fiscal and exchange rate policy regimes in low-income countries. They show how simple rule-based modifications to standard programmes can deliver substantially smoother macroeconomic outcomes. Under the heading of emerging markets, financial crisis and private capital flows, they have examined how openness of international capital markets makes countries vulnerable to crises, how macroeconomic policy can be conducted and how the supporting global financial architecture can be modified, to minimise the risks of crises, as capital market access improves and private capital flows dominate official aid flows.

Adoption of New Technology, Risk and Finance

Growth in very poor countries depends on firms adopting better technology and investing in more capital equipment, but this depends on the availability of finance, and entails risks to the small businessman, who is often a farmer. There has been a lot of research into the determinants of input and technology adoption in agriculture, with issues such as input availability, knowledge and education, risk preferences, profitability, and credit constraints receiving attention. In some of his research on *Risk, Shocks, Growth and Poverty: Evidence from Long-Term Household Panel Data*, Stefan Dercon focused on the differential ability of households to take on risky production technologies for fear of the welfare consequences if shocks result in poor harvests. Using a very extensive set of panel data for Ethiopia he identified the counterfactual consumption risk. Controlling for unobserved household and time-varying village characteristics, it emerges that not just *ex ante* credit constraints, but also the possibly low consumption outcomes when harvests fail, discourage the application of fertiliser. The lack of insurance causes inefficiency in production choices. This is one part of a larger project that uses extensive datasets on households and firms to test theories of investment and adoption of new technology in developing countries.7

7Stefan Dercon and Luc Christiaensen Consumption risk, technology adoption, and poverty traps: evidence from Ethiopia, WEFRP Working paper 0035, January 2008
Complementary with and closely related to Stefan Dercon’s research is that of Stephen Bond and Adeel Malik on Investment: Constraints on firms and links between Institutions and Growth. They have also used large panel datasets on households and firms in developing countries to test these hypotheses. The first part of the research used survey data on manufacturing firms in a number of developing countries (China, India, Brazil, Morocco and Ghana) to estimate models of these firms’ investment and spending. These models were then used to estimate the effect of uncertainty and finance constraints on investment. The results indicate that investment spending responds quickly to new information about demand. They also suggest that uncertainty strongly discourages long run capital accumulation. The research then investigated the relationship between investment as a share of national income and long run growth rates of income per capita. Higher investment leads to faster long run growth, as might be expected. The results are based on the analysis of annual data for 94 countries in the period 1960 to 2000 and a use of a broad range of econometric methods. The estimated models also explain persistent differences in investment levels across 61 developing countries. They show that the nature of political institutions and the quality of infrastructure provision are important influences. Countries with valuable natural resources tend to have lower investment rates. This could be due to weakened political institutions. The research shows little or no additional information in measures of political instability or macroeconomic volatility, which have been considered as important determinants of cross-country differences in investment levels in some earlier empirical studies. However, there is a positive effect of private sector credit as a share of GDP in explaining private sector investment shares within the sub-sample of countries that experienced relatively volatile inflation rates. This suggests that financial development may play an important role in cushioning the impact of macroeconomic volatility on private sector investment. The findings from this research contribute to our understanding of how economic and political institutions affect economic growth by influencing the rate of investment.

Risk Culture in China

While Africa still lags in the development stakes, China is bounding ahead. Its two decades of growth at around ten per cent per year have raised living standards enormously and transformed the Chinese economy. This rapid growth has been achieved by investing and saving on the order of half of national income. Despite the focus in the West on the importance of finance for facilitating growth, Chinese growth has been achieved despite rather primitive internal financial markets, which have arguably directed too much saving towards state-owned enterprises, and too little to smaller firms in the private sector. The move towards a market economy has spawned stock markets and housing markets which have been if anything even more volatile than those of Western economies. An interesting feature of the Chinese stock market has been the participation of households with low incomes and wealth. What are attitudes to risk and entrepreneurship among households and firms in China? And how do these affect saving and investment? Scott Lash and Michael Keith in their research on Risk Culture in China investigated these issues through detailed interviews with public officials, developers, planners, industrialists, and others. They gathered data on small investors in the Shanghai stock market through detailed long-term observation. Small investors behave differently towards stock market rises and falls. The rapid turnover of portfolios on the way up is replaced by ‘buy and hold’ on the way down. Investors are reluctant to take losses and prefer to hold stocks until prices have recovered. A striking feature of the Chinese economy is vigorous growth in a situation where property rights appear to be loosely delineated. Many people may have a variety of different claims on a building or piece of land. How are competing claims resolved? The Chinese economy and society appear to be able to work in these circumstances rather differently.

and more effectively, than might be expected in the United States or Europe. It raises questions about how markets, contracts, and economic relationships are perceived in China. Does this contribute to the success of Chinese reforms?

Latin America: Debt, Default, Poverty Reduction and Global Competition

A cluster of four research projects within the World Economy and Finance Programme had a largely Latin American focus, taking in issues surrounding sovereign debt and default, the use of policies that work in favour of the poor in response to global financial crises, and the challenges for the region posed by the growth of China.

Debt, Default, Re-Structuring

Lei Zhang and colleagues examined Moral Hazard, Political Economy, and Behavioural Approaches in International Finance. They looked at the workings of the international financial system, identifying the potential sources of inefficiencies and exploring the alternative architectures that might reduce the incidence and magnitude of episodes of economic distress, particularly in developing countries. They explored the roots of sovereign debt crises, the role of political institutions, and the role of psychological factors in volatility of exchange rates. A great variety of methods for theoretical modelling and empirical studies were employed, including game theory, and general equilibrium models. Although collective action clauses have been welcomed as good way of speeding up the resolution of sovereign debt defaults and restructurings, the research shows that they can have the opposite of the desired effect. They can actually increase the frequency of crises by reducing the sovereign debtor’s incentive to undertake costly policy measures that reduce vulnerability to negative external shocks. Measures to reduce the level of sovereign debt, which do not adequately address moral hazard on the part of the domestic elites will impose extra costs for domestic non-elite groups. Although speedy resolution is generally welcome, delays in the resolution of the sovereign debt crises can be efficient and signal the sovereign debtor’s concern about sustainability to creditors. Political institutions affect the stability and the predictability of credit markets. Presidential systems are 4.9 times more likely than parliamentary democracies to default on external debts. Expectations of devaluation under a potential new government may drive up country risk premium under its predecessor, a prediction consistent with the Argentina default in 2001. Psychological traits explain asset price bubbles and subsequent crashes, and may cause exchange rates to fluctuate excessively.

In closely related work, Amrita Dhillon with colleagues researched Legal and Economic Aspects of Sovereign Debt Default: The Argentina Case. They focused on the outcomes of bargaining over debt restructuring and analysed the impact of third parties, creditor heterogeneity and the legal structure of sovereign bonds on these outcomes; and they considered to what extent reputational considerations might prevent sovereign default. Inter alia they show that when more sovereign bonds are held by small creditors, the probability of default is higher and so are the risk premia in the interest rates they have to pay in order to borrow.
Pro-poor Policies

International financial crises hit developing economies in different ways, causing poverty and civil conflicts both in the short and in the long-term. Paul Mosely with Jean Grugel and Ben Thirkell-White in their project on The Political Economy of Pro-Poor Adjustment Policies have examined politics of poverty reduction, the impact on poverty of alternative adjustment policies, and the link between economic policy and political instability. They looked for strategies which are macro-economically effective and at the same time politically feasible and sustainable. One of the useful early-warning indicators of larger political instability are riots, the incidence of which has increased dramatically in many of the countries they studied over the period: Indonesia, Argentina, Bolivia, Russia and Zimbabwe. They found that ‘social efficiency wage’ policies – expenditure policies which defuse unrest – have an important role in offsetting such conflict and preventing it from turning into larger-scale instability. ‘Pro-poor expenditure’ targets public spending so as to reduce poverty: expenditure in primary health, primary education, rural infrastructure, agriculture, and on social protection; and a reduction in military spending. The linkage between pro-poor expenditure and poverty was examined using short-term, large-sample data from the East Asian crisis period, medium-term data for 1990 to 2007, and historical data for Uganda, Ghana, Kenya and Zimbabwe for 1914 to 2007. A concept of ‘pro-poor institutions’ was specified. The researchers composed a ‘pro poor institutions index’ to measure the ability of institutions to reduce poverty and the capacity to reduce conflict. This provides a link between aid and institutions. Trust between donor and recipient communities is a key element in successful strategies for poverty reduction. Where trust is high, as in Indonesia, Uganda and Ghana, aid flows are larger and more stable, and the impact of poverty reduction proportionately higher, than in low-trust environments such as Kenya and Bolivia.

Competition from Rising Powers

The expanding presence of China in world markets is having a major impact on both developed and developing countries, especially after its accession to the World Trade Organisation in 2001 and the end of the Agreement on Textile and Clothing in 2005. Rhys Jenkins examined The Impact of China’s Global Economic Expansion on Latin America. He distinguished between direct impacts, arising from bilateral trade and investment flows, and indirect effects through China’s impacts on global markets. These latter effects involved looking at Chinese competition in the markets to which the Latin American countries export (especially the United States and the European Union) and the impact of surging Chinese demand on primary commodity markets. Both the direct and indirect effects can be either competitive or complementary for the region’s economies.

Trade flows between China and the region involved the exchange of Chinese manufactured goods for Latin American raw materials. Moreover Chinese exports to the region are becoming more sophisticated in terms of their technological level, while Latin American exports are increasingly of the less processed products within each value chain (eg soybean exports from Argentina and iron ore exports from Brazil).

In recent years imports from China have grown rapidly and the trade surplus which Latin America as a whole enjoyed with China has now turned into a deficit and even major exporting countries such as Argentina and Brazil have deficits with China. The collapse of commodity prices over the past year will increase these deficits, leading to greater protectionist pressures in the region. Foreign Direct Investment (FDI) flows between China and Latin America have been limited. A major finding of the research was that the indirect impacts of China on Latin America were at least as important as the direct impacts. Contrary to previous studies which tended to downplay the extent to which the region (apart from Mexico) was likely to suffer from Chinese
competition in export markets, it was shown, using new methods and indices, that the impact was more significant and more widespread than generally thought. While the main impact has been felt by Mexico, the Dominican Republic and the Central American countries, especially in the US market, some of the South American countries, particularly Brazil, Argentina, Uruguay and Paraguay have also been affected.

Countries which export petroleum and minerals have benefited from the impact of China on global commodity prices, even where they do not have significant trade links with China. The estimated gains to the region from the ‘China effect’ on commodity prices were greater than the total increase in direct exports to China between 2002 and 2006.

Overall, the impact of China on Latin America varies considerably from country to country. Negative impacts were most evident in the Dominican Republic and most Central American countries, while Chile and the Andean countries benefited either directly through their exports to China or indirectly through higher commodity prices.

While Latin America may be affected by Chinese growth, parts of it have benefited from the North American Free Trade Area, which was to have allowed off-shoring of low skilled American jobs to Mexico and threatened US employment. China itself has been the destination for jobs off-shored from Japan, where there has been concern about the ‘hollowing-out’ of Japanese industry. Despite fears, the consequences of these global moves do not appear to have been negative. Henry Overman, Frederic Robert-Nicoud, Stephen Redding and Anthony Venables examined such issues in their work on The New International Division of Labour. The world economy is undergoing rapid change in patterns production driven by liberalisation, technological and market conditions and economic reforms. How have firms and regions responded? Globalisation has happened on the back of falling transport and communication costs. Data from the 1987 and 1997 censuses and from the quinquennial Census of Manufacturers shows that the efficiency benefits generated by off-shoring are shared with workers world wide. By making it more difficult for global firms to cut employment in routine tasks and, more generally, of unskilled jobs including manufacturing jobs, policymakers in countries like Spain and France (to take a couple of recent examples) make their economies unattractive for global firms to locate there, even their core tasks. Policies to prevent off-shoring and the loss of domestic employment might backfire. This research questions the view that offshoring hurts workers in advanced nations and accelerates convergence between rich and poor countries.

Off-shoring allows advanced nations to use state-of-the-art technology and employ low wage workers. This creates rents and profits. In competitive sectors, entry into the sector erodes rents. Expansion draws in resources as firms invest and hire workers in rich countries. As a result, off-shoring is a threat to displaced workers. The implications of these effects is that under realistic conditions workers with education levels similar to displaced workers might be among the winners of off-shoring, breaking an old skilled/unskilled divide regarding the benefits of globalisation.

What happens within firms? More than 50 per cent of US manufacturing firms alter their product mix between censuses, and 50 per cent change their product mix by both adding and dropping at least one product. Firms’ export decisions depend on firm productivity and firm-product-country consumer tastes, which are stochastic and unknown prior entry. Higher-productivity firms export more products to more countries. Trade liberalisation induces reallocation that fosters productivity growth within and across firms. The model explains key features of the observed distribution of exports across firms, products and countries.
Macroeconomics
Macroeconomics has had a bad crisis. Model building in this field is dominated by DSGE models – dynamic, stochastic, general equilibrium models – an outgrowth of the real business cycle models that became ascendant in the 1980s through the work of Ed Prescott and Fynn Kydland and others. They are based on strict canons of individual rationality, rational, forward-looking behaviour, and efficient financial markets. The baseline position is that market economies work well. Departures from such assumptions have to be carefully justified. The development of these models results from several decades of research that have rolled back the macroeconomics of Keynes’s General Theory and insisted on rebuilding it on firm microeconomic foundations. The result has been to unite the conceptual framework of macro- with that of micro-economics. They no longer differ in the models and theories used; only in the questions they address. Money itself, though central to financial and banking crises, plays little role in these models. A widely used assumption of ‘the representative household’ eliminates meaningful lending and borrowing. Default risk, collateral requirements, and very limited capital markets have only recently begun to make an appearance in such models. Including bubbles in asset markets remains very difficult. This approach has made some useful contributions. It has made macroeconomics more rigorous. The technical challenges of setting out and solving these models are great. The problems of estimating and testing them against data are even greater. Advances have been made in these directions. But energy has been focused on these meta-problems, generated by the modelling itself, at the expense of addressing practical issues and explaining real-world events. The macroeconomic projects in the World Economy and Finance Programme take a range of positions on the basic question of how macroeconomics should be done and how it should develop in the coming years. While the inflation-targeting framework has been a successful model for the developed world, at least until housing and stock market bubbles were allowed to build
up and eventually contributed to the financial crisis, it is less clear that it is suitable for developing countries, with less sophisticated financial markets, lacking robustly independent central banks that can resist political pressure to print money to finance public spending, and lacking a stable currency able to float in foreign exchange markets. Gianluca Benigno, Kosuke Aoki, and Sylvana Tenreyro have examined **Monetary Policy for Developed and Developing Countries**. They have added to knowledge of the transmission mechanism of monetary policy. They set out the interaction between fiscal and monetary policy in small open economy and provided policy analysis for emerging markets characterised by weak institution and financial frictions. Financial crises in emerging market economies in the 1990s were characterised by an abrupt decline in capital flows and a large decline in output. In order to explain these facts, recent models have replaced the assumption of perfect financial markets with plausible financial frictions which take the form of collateral credit constraints. The work done in this research shows that optimal stabilisation policy is highly non-linear in this setting. The findings reinforce the view that wage rigidities play an important role in the transmission of monetary policy.

Patrick Minford and Mike Wickens in **Open Economy Models – an Empirical Investigation** have taken a critical look at existing ways of estimating and testing the validity of DSGE models for open economies. They have developed new methods, and have reassessed how well some of these models fit the data. They estimated and tested open economy models using a bootstrap technique based on indirect inference. They have used models of the European Union, the United States, a combined model of both and the rest of the world, and a model of the UK alone, as test-beds for this method. They express general dissatisfaction with existing ‘first generation’ macro models and ‘second generation’ DSGE models. ‘First generation’ models make ad hoc assumptions. The DSGE models are unable to fit data closely because of their tight specifications, even if some of them capture essential economic mechanisms driving the effects of policy and other shocks. They compare two alternative approaches to testing: the ‘Puzzle’ method and ‘Strong Econometrics’. They found:

1. Allowing for changes in the monetary policy regime across sample periods, a ‘New Classical’ (NC) model of the first generation type (ie with a very high degree of price/wage flexibility), is on the borderline of acceptance, depending on the exact way regime change was represented in the data.
2. Looking at the persistence of UK inflation, which has varied over the course of time, and comparing New Keynesian (NK) versus NC models, they find that New Keynesian models cannot account for the variation in inflation persistence.
3. Neither the NK nor the NC model could remotely replicate the data. These models were poor at capturing inflation and interest rates.
4. Monetary policy during the banking crisis was found to be excessively restrictive in the EU.
5. Second generation models were not qualitatively that different from first generation models of the New Classical sort – a reassuring conclusion for policymakers.

**Housing Markets**
The collapse of the United States housing market in recent years is a prime cause of the 2007-08 financial crisis and global recession. The rise of house prices in the United States, the UK, Spain, Ireland, and many other European countries has been extraordinary. There are many questions as to what has caused it. Is it a down side to the success of inflation-targeting and independent central banks, that when inflation expectations eventually became anchored near zero and interest rates fell, a housing bubble developed? Or was it due to the expansion of the financial services industry, securitisation, and the greater availability of cheap mortgages? Were other
fundamentals at work too, such as greater expectations of future prosperity, encouraged by the stable environment of the ‘Great Moderation?’ Alexander Michaelides (working with Kalin Nikolov at the Bank of England and Nobuhiro Kiyotaki at Princeton University) on Home Ownership, Housing Collateral and Aggregate Fluctuations have examined some of these questions.

The recent explosion of aggregate household debt and house prices has led to concerns that both aggregate consumption and production are more vulnerable to financial shocks. Michaelides, Kiyotaki and Nikolov developed a model of the ‘household as a small business’ where house prices play a crucial role in determining consumer behaviour. They used it to analyse the effects of policies such as greater financial flexibility, on homeownership rates, house prices and aggregate consumption fluctuations. They then predict long-term aggregate consumption and quarterly stock market returns in the UK and the United States. Their model allows for the transfer of housing between generations, and builds in the fixity of the stock of land. This means that an increase in the demand for housing will increase real estate prices. They also allow for the risk of default and assume that creditors lend to house buyers who can make a big enough down payment.

Interestingly they found that despite increasing the home ownership rate, changes in the financing constraints have limited effects on house prices. Tenants or credit-constrained homeowners are relatively poor, so the effect of relaxing the borrowing constraint on house prices is simply absorbed by the conversion of rental housing into private housing. A permanent increase in the growth rate of labour productivity or a decrease in the world real interest rate affect the wealth of various households differently, causing winners and losers in housing markets. An increase in house prices leads to a redistribution of wealth from relatively poor tenants to rich unconstrained homeowners. The wealth effect of house prices on consumption is negligible because the positive wealth effect of the unconstrained homeowners is offset by a negative wealth effect of the relatively poor renters.

Drawing on the theoretical results, they have constructed a new indicator with which to forecast the quarterly stock returns in the United States and the UK. It is the deviation from an estimated long-term relationship between consumption, financial wealth, housing wealth and labour income. They show that is a better predictor than various alternatives.

They argue that particular emphasis should be placed on the housing market because changes in housing wealth have a persistent effect on both stock market returns and aggregate consumption. While more credit market flexibility has a negligible impact on house prices, it has an important effect on ownership. In a small open economy, such as the UK, a fall in the world interest rate can increase house prices over the long-term and, therefore actually reduce the ownership rate.
Fiscal Policy and Management of Public Debt
Using Fiscal Policy to Stabilise the Economy

The work of Campbell Leith and Simon Wren-Lewis in *Reinstating Fiscal Policy as a Stabilisation Device* is particularly appropriate at the present juncture. The prompt action by governments across the world to cut taxes and increase spending, or at least to allow it to increase as economies have gone into recession, has surely been a huge success in avoiding economic Armageddon. The situation is bad, but not the catastrophe it might have been. Nevertheless, the use of fiscal policy in this way has been under prolonged attack. Even since 2007 there have been voices raised against it, primarily in the United States, but also to some degree in the UK and continental Europe.

In the mid 1970s, the idea of ‘Ricardian Equivalence’, that the timing of taxation is irrelevant for economic activity and welfare, undermined the view of the 1950s and 1960s that fiscal policy was a useful tool for demand management. Uncertainty over the magnitude and timing of the effects of fiscal policy cast further doubts over its ability to stabilise. As a result, it gradually lost centre stage to monetary policy as a tool for macroeconomic stabilisation and inflation control. With the implementation of the Euro, interest in fiscal policy as a stabilisation device has been renewed. In the current economic and financial climate, monetary policy is less effective than in normal times because interest rates have gone as low as they can go. Fiscal policy is back on the agenda. Leith and Wren-Lewis assess the possibility of reinstating it as a tool of demand management, and they study the interactions between fiscal and monetary policies. The research analyses the role of fiscal policy in a low-inflation environment and under the European Monetary Union (EMU). It investigated the effectiveness of fiscal policy in countering asymmetric shocks in EMU, and it looked at targeting the level of the national debt as part of optimal fiscal policy.

The research started by analysing the effectiveness of the fiscal instruments in small open economies. Fiscal stimuli offset the impact of both technology and mark-up shocks, when exchange rates are flexible. Outside the Economic and Monetary Union, monetary policy is responsible for macroeconomic stabilisation and fiscal policy has been used to keep governments solvent. The tax instruments turn out to be useful fiscal devices because they reduce the welfare costs associated with mark-up and technology shocks. Government spending is however ineffective for managing aggregate demand fluctuations.

Forcing policymakers to pre-commit to a fiscal policy generates an incentive not to build up too much public debt. Without commitment, the government may be tempted to surprise people with higher-than-expected inflation, in order to reduce the debt. This incentive is also known as the debt stabilisation bias. The temptation of the benevolent policymaker can be eliminated so long as the steady-state debt level is close to the efficient level of debt after a shock. The welfare costs of stabilising debt are significant for discretionary policies but less pre-commitment policies.
Debt-management policies have played an important role in the macroeconomic stabilisation package. A growing literature integrates theories of debt management into models of optimal fiscal policy. One promising theory argues that the composition of government debt should be chosen so that fluctuations in the market value of debt offset changes in expected future deficits. This complete markets approach to debt management is valid even when the government only issues non-contingent bonds. A number of authors conclude from this approach that governments should issue long-term debt and invest in short-term assets.

Andrew Scott, Albert Marcet and Elisa Faraglia show in Risk Sharing and Contingent Debt that the conclusions of this approach are too fragile to serve as a basis for policy recommendations. This is because bonds at different maturities have highly correlated returns, causing the determination of the optimal portfolio to be ill-conditioned. To make this point concrete they examined the implications of this approach to debt management in various models, both analytically and using numerical methods calibrated to the United States economy. They found the complete markets approach recommends asset positions which are huge multiples of GDP. Introducing persistent shocks or capital accumulation only worsens this problem. The main conclusion of their work is that it is very difficult to insulate fiscal policy from shocks by using the complete markets approach to debt management.

Using data from the Organisation for Economic Co-operation and Development, on the market value of government debt between 1970 and 2000, and a range of performance indicators for debt management, using Monte Carlo analysis, they found that those based on the relative persistence of debt perform best.

When a government pursues an optimal fiscal policy under complete markets, the value of debt has the same or less persistence than other variables in the economy and it declines in response to shocks that cause the deficit to increase. By contrast, under incomplete markets debt shows more persistence than other variables and it increases in response to shocks that cause a higher deficit. Data for US government debt reveals diametrically opposite results from those of complete markets and is much more supportive of bond market incompleteness.
In their work on *Population Change, Demographic Uncertainty and Financial Risk*, Martin Weale and Justin Van de Ven explored economic, financial and policy responses to demographic uncertainty. They looked at influences on fertility rates and female labour supply, and analysed issues associated with an ageing population. In this analysis, women were assumed to make rational choices, knowing the risks associated with their socio-economic environment, including the impact of uncertainty about the durability of marriage. The key uncertainty in the work on mortality risk is uncertainty about future mortality rates. They developed their core model into a powerful tool for the analysis of policy, and supplied a dynamic programming model to the Department of Work and Pensions and Excise to explore the effects of changes to tax and benefit rates on the behaviour of households in different circumstances.

The main results can be summarised as:

1. **Fertility**: Their model of households’ decisions about how many children to have, and who should work in the labour market, and for how long, explains the overall change in fertility and labour market participation between the 1953 and 1963 female birth cohort as being due to changes to the stability of marriage and changes in women’s earnings opportunities. Fertility was depressed by the reduced stability of relationships in the 1963 cohort relative to those of the 1953 cohort. This is a direct response to the lower life-time incomes enjoyed by women in the context of lower marital rates. The general conclusion is that the main differences in the fertility and employment decisions of the 1963 cohort compared to the 1953 cohort can be explained by changes in the socio-economic climate.

2. **Demographic Risk and Fiscal Uncertainty**: The effects of demographic risk on the government’s budget was studied by using 1,000 simulated trajectories of the future population, computed using random shocks to fertility, mortality and migration rates. The core model with the revenue collected as a proportional tax on disposable income suggests that the cost of demographic uncertainty, with
the social security system structured as it is, is not large. (3) Demographic Risk, the Public Sector and Endogenous Pricing: The simulation work suggests that the optimal choice was to split wealth roughly 50/50 between mortality adjusted and conventional annuities. A policy where the government fixed a price for mortality-adjusted annuities and also levied a lump-sum tax or paid a lump-sum benefit led to a lower charge for risk than did the market solution and delivered higher \textit{ex ante} welfare for all cohorts.

The primary achievement of this research is in continuing the development of the dynamic programming techniques used. This could be useful in the long-term to government and private sector analysts. The work is also of clear interest to the greater academic community in three disciplines – economics, demography, and actuarial science.\textsuperscript{9}

\textsuperscript{9}Justin van de Ven and Martin Weale, 2008. \textit{Annuities and Aggregate Mortality Risk}, NIESR Discussion Papers 302, National Institute of Economic and Social Research.

Justin van de Ven and Andrew Skeen & Sarah Volchofsky, 2008

\textit{The Influence of Uncertainty on Fertility and Female Labour}

Women were assumed to make rational choices, knowing the risks associated with their socio-economic environment.
mong the big questions of the day is that of global imbalances and the growth of huge international portfolios of assets. People in one country hold massive quantities of assets located in other countries, whether government bonds, equity shares through stock markets, direct ownership of subsidiary firms located in other countries, and so on. They may be owned by households directly, or via pension funds and insurance companies, or through government debt and assets, such as China’s large stock of US government securities. The net claims of one country against another generally represent a relatively small difference between two very large quantities: the gross claims of each country against the other. It is an important task for macroeconomic models to be able to explain these large portfolios of assets, and incorporate them into macroeconomic models.

Alan Sutherland, in his research on Monetary Policy, Welfare and the Structure of International Financial Markets, in which he has worked extensively with Michael Devereux has made important strides towards this. They have developed a new solution method which allows the analysis of portfolio problems in open economy dynamic general equilibrium models. The models are non-linear and difficult to solve in their raw state. The normal method is to work out a linear approximation to the model. But this effectively prevents attitudes to risk from affecting the (approximate) solution, and it does not let you work out the portfolios of assets that people choose to hold. To do this requires higher order approximations, at least second order (quadratic) and for some purposes third order. But a third order approximation becomes inordinately complex. Sutherland and Devereux have devised ingenious methods for introducing higher order approximations only where necessary in the analysis, so that they keep the mathematical problem relatively simple, while at the same time they are able to calculate optimal portfolios and examine the effects of things like attitudes to risk.

One of the main achievements of this research was to show how solution methods based on second-order approximation
techniques offer a powerful and tractable approach for analysis of asset market problems. This study demonstrates that it can be applied to any standard open economy model with any number of assets, any number of state variables, and complete or incomplete markets. The solution technique also allows one to obtain solutions for asset returns.

While most of the research in the World Economy and Finance Programme has focused on data from the recent past, more distant events provide important complementary information on exchange rate systems. Chris Meissner in Exchange Rate Regimes: Choices and Consequences in a Global Economy and Catherine Schenk in The Experience of Exchange Rate Regime Change among Developing Countries, together with their collaborators, have used historical evidence from the 1880s onwards. Hit particularly hard by the financial crisis, with growing foreign debts and diminishing dominance of the world economy as China grows, the United States may some day cease to be the supplier of the global reserve currency. The dollar’s role has been questioned recently. The Chinese government has proposed increasing use of SDRs in international trade and payments, and they are gingerly allowing the Renminbi to play a larger role. Will the dollar be ditched at some point, as sterling was in the 1950s and 1960s? Will the transition be rapid and painless, or drawn-out and painful? What might the new international financial system look like? From analysis of 150 years of evidence, Chris Meissner and co-authors argue that there might be a sudden switch from the dollar at some point. Strong network externalities sustain the use of a global currency long after the fundamentals have moved against it. The value to one country of using the dollar for international payments and reserve holdings is greater, the more other countries use it. There is a coordination problem among countries: they all benefit from using the same global currency; but which one? It matters less which it is than that they all use it in common. On this argument there may be a rush for the exit at some point when a critical mass of countries stops using the dollar and starts using something else. There may be a tipping point.

Catherine Schenk, in her research focused on the end of

There is a coordination problem among countries: they all benefit from using the same global currency; but which one?
the sterling era in the late 1960s and 1970s. The countries that held foreign exchange reserves in sterling, and pegged to the pound, such as Hong Kong, New Zealand, and Malaysia, adopted a variety of different strategies in response to Britain’s global economic decline and growing inability to support a reserve currency role. All faced problems due to the devaluation of the pound, and these placed burdens on the United Kingdom in turn. But the use of sterling as a significant reserve currency persisted longer than is frequently acknowledged. One of the problems created by the decline of sterling, which may be faced in coming years by countries that peg to and hold reserves in the dollar, was that countries like New Zealand had changed their exchange rate policy away from a sterling peg before they had moved their reserves out of sterling. They then faced the risk of a loss of the real value of their foreign exchange reserves, as do China and other major dollar holders today.
The Projects

Twenty six research projects make up the World Economy and Finance Programme, which are clustered around a number of key themes. These are:

Financial Markets
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- Regulatory Regime Change in World Financial Markets: The Case of Sarbanes-Oxley, Justin O’Brien, Ciaran O’Kelly, Sally Wheeler and others, University of Belfast
  s.wheeler@qub.ac.uk
- Financial Contagion: An Experimental Analysis, Antonio Guarino and Steffen Huck, University College, London
  a.guarino@ucl.ac.uk
- Herding in Financial Markets, Hamid Sabourian and Daniel Sgroi, University of Cambridge
  hamid.sabourian@econ.cam.ac.uk

Finance and Growth
- National and International Aspects of Financial Development Panicos Demetriades and others, University of Leicester
  p.demetriades@le.ac.uk
- Law, Finance and Development, Simon Deakin, University of Cambridge
  s.deakin@cbr.cam.ac.uk
- Weak Property Rights: Financial Markets and Development, Colin Rowat and Jayasri Dutta, University of Birmingham
  c.rowat@bham.ac.uk

Economic Development
- Managing Macroeconomic Risk in Low-Income Countries: Institutions and Policies, Christopher Adam, Paul Collier and David Vines, University of Oxford
  paul.collier@economics.ox.ac.uk
- Risk, Shocks, Growth and Poverty: Evidence from Long-Term Household Panel Data, Stefan Dercon, University of Oxford
  stefan.dercon@economics.ox.ac.uk
- Investment Constraints on Firms and Links Between Institutions and Growth, Stephen Bond, Adeel Malik and Mans Soderbohm, University of Oxford and Institute for Fiscal Studies
  steve.bond@nufeed.ox.ac.uk
- Transnational Investment, Human Rights and Sustainable Development, Sheldon Leader, University of Essex
  leader@essex.ac.uk
- Risk Culture in China: an Economic Sociology, Scott Lash and Michael Keith, Goldsmiths, University of London
  s.lash@gold.ac.uk
- Legal and Economic Aspects of Sovereign Debt Default: The Argentina Case, Amrita Dhillon, University of Warwick
  a.dhillon@warwick.ac.uk
- Moral Hazard, Political Economy, Behavioural Approaches in International Finance, Lei Zhang, University of Warwick
  L.Zhang@warwick.ac.uk
- Strategies for Dealing with Global Crisis: Distributional and Political Impacts, Paul Mosley, University of Sheffield
  p.mosley@sheffield.ac.uk
- The Impact of China’s Global Economic Expansion on Latin America, Rhys Jenkins, University of East Anglia
  r.o.jenkins@uea.ac.uk
Global geography and change
– The New International Division of Labour, Henry Overman and Stephen Redding, London School of Economics
  h.g.overman@lse.ac.uk

Macroeconomics
– Open Economy Models: an Empirical Investigation for the UK, Patrick Minford, Cardiff University, and Michael Wickens, University of York
  MinfordP@cardiff.ac.uk
– Home Ownership, Housing Collateral and Aggregate Fluctuations, Alex Michaelides, London School of Economics
  A.Michaelides@lse.ac.uk
– Reinstating Fiscal Policy as a Stabilisation Device, Campbell Leith, University of Glasgow, and Simon Wren-Lewis, University of Oxford
  c.b.leith@socsci.gla.ac.uk
– Risk Sharing and Contingent Debt, Andrew Scott, London Business School
  ascott@london.edu
– Designing Monetary Policy for Developed and Developing Countries, Gianluca Benigno, Kosuke Aoki and Sylvana Tenreyro, London School of Economics
  g.benigno@lse.ac.uk
– Demographic Uncertainty and Financial Risk, Martin Weale and Justin van der Ven, National Institute of Economic and Social Research
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International Finance
– Monetary Policy, Welfare and the Structure of International Financial Markets, Alan Sutherland, University of St Andrews
  ajs10@st-and.ac.uk
– Exchange Rate Regimes: Choices and Consequences in a Global Economy, Christopher Meissner, University of Cambridge
  cmm@ucdavis.edu
– The Experience of Exchange Rate Regime Change Among Developing Countries 1968-78, Catherine Schenk, University of Glasgow
  c.schenk@socsci.gla.ac.uk

The projects have produced a great quantity and variety of results, published in many working papers, articles, and books. All their activities and results are described in full in research reports that are lodged on the ESRC web site, in reports on the web sites of the individual researchers and projects (listed above), and on the web site of the programme. So the purpose of this article is not to catalogue all their achievements. It merely highlights a few striking examples.

The programme was directed by John Driffill, Professor of Economics at Birkbeck College, University of London.

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www.worldeconomyandfinance.org
www.esrc.ac.uk
www.esrcsocietytoday.ac.uk/ESRCInfoCentre/research/research_programmes/world_econ_fin.aspx
Activities and Events

The World Economy and Finance Programme organised and funded a diverse range of events, networking and knowledge transfer activities.

2005:
Workshop: World Economy and Finance (WEF), Birkbeck, University of London, 7 October
Accountable Governance: An International Research Colloquium, Queen's University, Belfast, 20-22 October
GovNet Conference 2005 – Contemporary Issues in Governance, Monash University, Melbourne, Australia, 28-30 November

2006:
The Economic Impact of Oil Supply Shocks on the G7 Countries, Centre for Economic Policy Research (CEPR), London, 27 February
Workshop: World Economy and Finance Programme, Birkbeck, University of London, 5 May
Global Imbalances Workshop, Birkbeck College, London, 22 June
WEF/CEPR Discussion Meeting, CEPR, London, 9 November

2007:
WEF/CEPR Discussion Meeting: The New International Division of Labour, Henry Overman and Stephen Redding (London School of Economics), HM Treasury, London, 19 January
WEF/CEPR Discussion Meeting: Fear and Market Failure: Global Imbalances and Self-Insurance, Marcus Miller (University of Warwick & CEPR), Chartered Accountants’ Hall, London, 13 February
WEF/GOVNET Workshop: The Dynamics of Capital Market Governance: Evaluating the Conflicting and Conflating Roles of Compliance, Regulation, Ethics and Accountability Australian National University, 14-15 March
Conference: Exchange Rates: Choices and Consequences, organised by Michael Bordo (University of Cambridge, Rutgers University and NBER) and Christopher M Meissner (University of Cambridge and NBER), University of Cambridge, 15-16 June
WEF/CEPR Discussion Meeting: The Timing of Monetary Policy Shocks, Silvana Tenreyro (London School of Economics), CEPR, London, 18 June
FMG Conference: Cycles, Contagion and Crises, London School of Economics, London, 28-29 June
WEF Programme, Research Workshop, University of Warwick, 13-15 July
Annual Conference: Centre for Dynamic Macroeconomic Analysis, University of St Andrews, 5-7 September
The Financial Crisis Conference, London School of Economics, London, 1 October
Conference: When the Music Stops: Private Equity, Securitisation and the future of Capital Markets, University of Sydney Law School, 14 December
2008:
Conference: The International Monetary Fund and Financial Crises. The Role of Institutional and Governance Reform, University of Cambridge, 3-6 April
IMF/WEF Finance Conference on International Macro-Finance, IMF Headquarters, Washington DC, 24-25 April
Monetary Policy in Developed and Developing Economies, London School of Economics, Centre for Economic Performance, London, 2-3 May
WEF/CEPR Discussion Meeting: Who will Guard the Guardians? The Case for Fiscal Councils, CEPR, London, 19 June
WEF Workshop: Incentives and Governance in Global Finance, University of Warwick, 17-18 July
The Money Macro and Finance Research Group (MMF), 40th Annual Conference, Birkbeck College, London, 10-12 September
Project Colloquium: The Globalization of Corporate Governance? Reform Pressures and Processes in an Era of Financial Crises, Queen's University Belfast, 17-18 September
Workshop: Financial Crises and Regulation: Lessons from the Past? University of Glasgow, 24 October
Workshop on Sovereign and Public Debt and Default, University of Warwick, 4-5 December
Conference – Information Externalities, Social Learning and Financial Markets, University of Cambridge, 15-16 December

2009:
Conference: Regulatory Response to the Financial Crisis, London School of Economics and Political Science, 19 January
International Macroeconomics and Finance Conference, organised by CEPR, ECARES (Université Libre de Bruxelles), University of Leuven, the National Bank of Belgium, and WEF, Central Bank of Belgium, Brussels, 13-14 February
The Politics of Macro-Adjustment and Poverty Reduction Conference, ICOSS Centre, University of Sheffield, 11 March
The 2008 Crash and the Future of the Global Economy, Strathclyde Suite, Glasgow Royal Concert Hall, 2 Sauchiehall Street, Glasgow, 11 March
The Future of Financial Regulation Conference, University of Glasgow, 30-31 March
Housing, Financial Assets and the Economy, London 18-19 May
Governance Symposium, Judge Business School, Cambridge, 26 June
Law Reform and Financial Markets Institutions and Governance, the W. G. Hart Legal Workshop 2009, 23-25 June
2009:
Annual workshop: New Micro-foundations for Macroeconomics Workshop, University of Warwick, 10-11 July

MMF-WEF Half Day Symposium on Finance and Growth, Birkbeck, University of London, 29 July

Risk, Finance and Modernization: A Chinese-European Summit, Conference & Colloquium, Shanghai, 27-29 September

Africa after the Crisis, public lecture and discussion, 61 Whitehall, London, 25 November 2009

COOL Conference, University of Cambridge, Friday 11 December


2010:
Workshop on the Political Economy of Oil Revenues in the Middle East and North Africa, University of Oxford, Friday 8 January 2010

WEFRP Conference, Institute of Civil Engineers, London, 28 January 2010