

# Briefing Notes in Economics

*'Helping to de-mystify economics since 1992'*

Indexed with the *Journal of Economic Literature*

Issue No. 70, September/October 2006 <http://www.richmond.ac.uk/bne> ISSN 0968-7017

## **The Equity Premium in Australia and the United States: 1889-1978<sup>1,\*</sup>**

**Simon Ville\***

*School of Economics and Information Systems, University of Wollongong,  
Wollongong, New South Wales, NSW 2522, Australia*

*First version received on 29<sup>th</sup> July 2005*

*Final version received on 12<sup>th</sup> September 2005*

The equity risk premium puzzle has received regular attention by economists since it was first invoked by Mehra and Prescott twenty years ago. In a recent paper, they revisit the question and reject many of the explanations offered but we are left with no clear alternative account. The current paper seeks to do two things. We provide matching historical evidence of the equity premium for Australia and compare the results for the two nations. Resulting from this, we argue that a closer understanding of phases of economic history helps to explain the puzzle. **JEL: G12, N2.**

### **Other material in this Issue:**

- 1. A listing of useful and interesting websites.**
- 2. Brief suggestions for useful readings.**
- 3. Book Review** for Goldin, and Reinert's (2006) *Globalisation for Development: Trade, Finance, Aid, Migration and Policy*; by Simon Feeny of RMIT University in Australia.

---

<sup>1</sup> I gratefully acknowledge the comments of Dr Abbas Valadkhani and an anonymous referee on an earlier draft of this paper.

## 1. Introduction

Twenty years ago Mehra and Prescott's paper in the *Journal of Monetary Economics* brought to light the existence of the so-called equity premium puzzle. The 'puzzle', or paradox, lay in the wide gap between real returns to equity and to government bonds revealed by a longitudinal study of the United States over the course of nearly a century between 1889 and 1978. Standard competitive equilibrium models suggested that, while an equity premium or gap should exist to reflect the greater risk associated with equity investment, this should converge to the order of one percentage point rather than the mean of six percentage points revealed by their historical research.<sup>2</sup>

Mehra and Prescott's work, while skeptically received at first, subsequently has received much attention in the economics literature. The focus has been on theory development and refinement in order to reconcile their quantitative empirical findings with economic analysis. Good summaries of the literature at different stages are provided by Kocherlakota and by Mehra and Prescott (2003). Various strands of theory development can be identified. Of central importance has been discussion of investor preferences, market incompleteness, and anticipated versus actual returns. Investors may be subject to greater risk aversion than traditional modelling assumed, particularly as a result of habit formation. Asset markets suffer from friction particularly as a result of differentials in transactions costs and

---

<sup>2</sup> In their most recent paper, Mehra & Prescott (2003) extend the data to 2000 leading to a slightly higher premium. This addition does not affect the arguments proffered in our paper. The Australian series on which we draw has not currently been extended through the 1980s and 1990s. A project to do so would motivate a related research topic – the degree of any equity premium convergence between nations in the light of recent capital market globalisation trends.

asymmetries in information. Significant differences may exist between ex ante expected returns and ex post results.

## 2. The Equity Premium in Australia

It is evident from the above discussion that most of the literature on the equity premium puzzle has addressed conceptual and theoretical issues. There have been only limited attempts to look more closely at the historical data itself, calculations of the equity premium being mostly restricted to the United States or to the post-world War Two experience of several other similar manufacturing nations including France, United Kingdom, Germany, and Japan (Campbell; Siegel). In this briefing note, we calculate the equity premium for Australia across the same long run period as that of Mehra and Prescott for the United States. This provides us with an opportunity to draw comparisons of long term trends and shorter historical periods between two nations with distinctive economic structures. Australia's emphasis upon the primary resource industries and a relatively active role for government contrasts with American laissez-faire industrial capitalism.

The calculation of equity returns uses the same method as Mehra and Prescott, namely the holding return that incorporates dividend yields and changes in share prices. It draws upon Pope's 'all ordinaries' indices for share prices and dividend yields, (which fortuitously covers almost exactly the same period as Mehra and Prescott) and then is price adjusted with Shergold's GDP deflator. The results show a mean equity premium of 4.73 per cent covering the same period as the American data.

## 3. Comparisons of Australia and the United States

The decadal means are indicated in table one and figure one, at the end of the paper, comparing Australia with the United States.

Several results are immediately apparent. Except for the 1950s, the trend is very similar between the two countries. However, the Australian mean premium over the century is nearly a quarter below that of the United States and the inter-decennial fluctuations are smaller and less volatile, as reflected in a much lower standard deviation. This suggests that cross investments between the two markets were relatively limited and were overlain by the existence of distinctive features for each capital market. Australia's very different historical experience from the United States and the other key industrialized nations was as a small nation specializing in the resource industries. As price takers in notoriously volatile sectors, one might expect investors to be more risk averse in their investment strategies, thereby implying a larger equity premium as fewer moved to take advantage of asset return differentials. This is the logic behind the conceptual literature. It might alternatively be postulated that less demand for equity would constrain the growth of stock market prices and thus possibly the holding return to equity. Another empirical observation is that the Australian character would rarely be regarded as risk averse: gambling and hubris being more noticeable. This might suggest a greater willingness to invest in risky equity ventures. Successive investor booms in the highly speculative mining industries would tend to confirm this trait (Blainey). In addition, official policy fostered risk-taking investment, including the 'no-liability' mining share, whereby an investor was not obliged to meet further unpaid calls.

In fact, there is probably limited value in deducing particular conclusions about means averaged across a century worth of data in light of the much more limited time perspective of the individual investor and the enormous changes in the business environment across the course of time. Instead, we should scrutinize more carefully the data for shorter periods. What is striking for the US data is that in only 3 of the 9 decades is the equity premium above 5 per

cent, and there are two clear outliers, 14.6 per cent for the 1920s and 18.3 per cent for the 1950s, which are more than double the mean; and in the latter case is triple the mean and more than double all the remaining decennial means. If we remove the two outliers the mean premium of the remainder halves to 3.2 per cent. In the Australian case, outliers are less evident. However, if we remove the two highest figures, those above 9 per cent, the mean falls to a very similar 3.4. If, alternatively, we remove the top 2 and bottom 2 decennial means we get respectively 4.35 and 5.03 for USA and Australia. Thus, the American figure still fell noticeably from the original, while the Australian one actually rose marginally. This confirms the distinctive nature of two decades of American economic and business history, the 1920s and the 1950s, to the long term mean of the equity premium, or a range of other economic variables for that matter. Let us look briefly at the history of those two decades.

#### **4. Phases of Economic History and the Equity Premium Paradox**

The 1920s were a decade of rapid growth and structural change in the American economy. It is during this period that the origins of the modern consumer economy can be mostly accurately dated. Household appliances (washing machines, refrigerators, vacuum cleaners) and a wide range of automobile models became available, and whose purchase was facilitated and sustained by the rapid expansion of consumer credit facilities. Companies that were quick to recognize this consumer revolution, such as General Motors, experienced exceptional prosperity. Other corporations, located particularly in chemicals, pharmaceuticals, and electronics, established major research laboratories in the 1920s that generated new consumer products. These included Du Pont, Procter and Gamble, General Electric, and

Westinghouse (Chandler). Many of these companies invested overseas in the 1920s and 1930s, providing benefits to local equity holders in other countries, though to a muted degree as demonstrated by the Australian equity premium figures, which peaked in the 1920s.<sup>3</sup>

The 1950s additionally provided exceptional growth opportunities for the American economy. At the end of World War Two, the United States was well placed to exploit the economic benefits of peace. Its erstwhile competitors in Western Europe and Japan had suffered major economic and political dislocation. The provision of Marshall Aid (European Recovery Programme) provided further opportunities for American exports and overseas investment on top of an already booming domestic economy (Milward). A new range of consumer industries, supported by sophisticated research and persuasive advertising, included television and air travel. At the same time successive governments committed huge investments to economic infrastructure and military defence. By contrast, Australia performed badly in the early 1950s as the Korean War temporarily fuelled demand for wool exports. The collapse of the boom coincided with the adverse effects it had already had upon inflation and the international trade balance leading to a sharp contraction in output and in the stock market (Waterman: 64-98). Some of this loss was made good, however, in the 1960s.

The two decades of the 1920s and 1950s presented American investors with exceptional opportunities in light of the rapid growth of real dividends and stock prices (Grossman and Schiller; Siegel). However, inter-temporal changes in risk aversion, driven by habit formation, and the distinction between ex ante decisions and ex post returns explain why these opportunities were not effectively exploited by investors.

The post-World War Two decade had been preceded by a serious and sustained downturn in the American economy in the 1930s followed by the uncertainty, if not dislocation, created by the war. In these circumstances, investors were likely to have become more risk averse than in other more stable periods of economic development. While the pre-1914 economic environment and that of World War One provided less grounds for risk averse responses, few could have imagined or predicted the remarkable economic expansion of the American economy in the 1920s. In each case, the distinction between ex ante expectations and ex post returns would have been substantial. Frictions created by differences in transaction costs and imperfect information may have delayed an investor response; once it did come from the middle of the decade share prices were driven to unsustainably high levels and with it holding returns on equity and the equity premium (Mehra & Prescott, 2003: 897, 900).

## 5. What is a reasonable ‘wedge’ and how quickly might it converge?

If the size of the equity premium in the 1920s and 1950s is explained by historical exceptionalism, are there grounds for accepting the residual long term figure of 3 to 4 per cent as a reasonable ‘wedge’? Here we can turn to some further profitability evidence from Australian historical experience. We would expect a gap between the return on equities and bonds both because of their varying risk profiles and because of any frictions in investors switching between different classes of asset. Equally, it would be reasonable to expect a much smaller wedge between investment returns in different equities, across industries or companies, because they belong to the same asset class and constitute similar levels of risk.

In a second set of Australian historical data, we have compared the returns to

<sup>3</sup> Many American manufacturers established in Australia in the 1920s, Forster (1964).

shareholders in different industries across the interwar period, organized upon the basis of the Australian and New Zealand Standard Industrial Classification.<sup>4</sup> This measures net profitability after taxes and depreciation as a percentage of shareholder funds on a price adjusted basis. The results of the two best and worst performing ANZSIC categories are presented in table 2 on page 7, below. The best performing sector, manufacturing, does nearly twice as well as the worst, culture and recreation, with a gap of 4.2 per cent. Nor is there any evidence of convergence across two decades. Manufacturing is the best performer in the 1920s. Explanations for this include the influx of American multinationals, tariff policy, and cost-reducing innovations (Ville and Merrett). Further disaggregation of manufacturing into distinct industries reinforces the existence of gaps and non-convergence in rates of return.

understand the exceptionalism of the 1920s and 1950s in America (ex ante decisions v ex post outcomes, and inter-temporal shifts in risk aversion); they also aid our understanding of larger and more persistent differences than predicted even within asset classes. Most likely, this can be attributed to incomplete markets and imperfect information. In these circumstances, premiums of 3 or 4 per cent in ‘normal’ periods may not be uncommon, with much larger gaps in exceptional periods.

## 6. Conclusion

While the original theorizing on the basis of frictionless Arrow-Debreu type general equilibrium models suggested convergence in rates of return, excepting for a small risk premium across different asset types, the historical evidence paints a quite different picture of larger and more persistent differences. In their most recent discussion of the topic, Mehra and Prescott (2003) acknowledge the importance of analyzing shorter run historical periods. We build on this approach. The theoretical refinements offered to the original model help us to

---

<sup>4</sup> This research is part of a wider project funded by the Discovery Project scheme of the Australian Research Council and will be extended to measure firm and industry profitability for Australia throughout the twentieth century. Chief investigators are Professor David Merrett and Professor Simon Ville. The data for table 2 is extracted from a series of investment digests and includes approximately 500 companies per year.

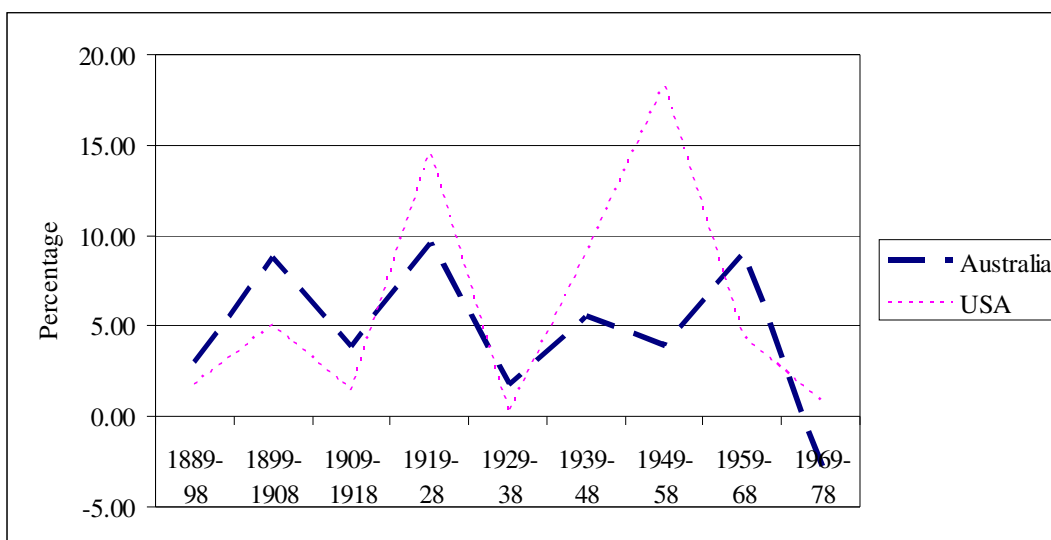
Table 1: The Mean Equity Premium in Australia and the United States, 1889-1978

|           | Australia | USA   |
|-----------|-----------|-------|
| 1889-98   | 3.01      | 1.78  |
| 1899-1908 | 8.82      | 5.08  |
| 1909-1918 | 3.90      | 1.49  |
| 1919-28   | 9.53      | 14.64 |
| 1929-38   | 1.77      | 0.18  |
| 1939-48   | 5.49      | 8.89  |
| 1949-58   | 3.93      | 18.3  |
| 1959-68   | 9.07      | 4.5   |
| 1969-78   | -2.91     | 0.75  |
| Mean      | 4.73      | 6.18  |
| SD        | 4.04      | 6.49  |

Sources: USA: Mehra & Prescott (1985); Australia: Pope; Shergold

Note: The method of calculating the American equity premium is provided by Mehra and Prescott (1985). The Australian equity premium was calculated by initially summing the annual change in the share index with the dividend yield to produce the holding return. The bond yield was subtracted from this figure to achieve the nominal equity premium, which, in turn, was price adjusted with the Shergold deflator using the same base year (1972) as Mehra and Prescott.

Figure 1: The Mean Equity Premium in Australia and the United States, 1889-1978



Sources: as per table 1

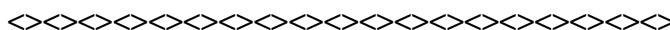
Table 2: Real net profitability, 1920-38, by selected ANZSIC

| <b>ANZSIC Code</b>             | <b>1920</b> | <b>1921</b> | <b>1922</b> | <b>1923</b> | <b>1924</b> | <b>1925</b> | <b>1926</b> | <b>1927</b> | <b>1929</b> |
|--------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Manufacturing                  | 9.4         | 10.0        | 11          | 10          | 11.9        | 8.3         | 12.3        | 10.8        | 8.8         |
| Electricity, Gas, Water Supply | 7.6         | 8.3         | 9.0         | 9.1         | 8.4         | 8.0         | 8.6         | 8.3         | 8.9         |
| Wholesale Trade                | 10.9        | 8.9         | 5.4         | 6.8         | 6.5         | 7.1         | 7.4         | 5.8         | 6.9         |
| Cultural / Rec Services        | 2.8         | 7.8         | 6.1         | 5.1         | 5.7         | 7.8         | 7.4         | 8.3         | 4.6         |

| <b>ANZSIC Code</b>             | <b>1930</b> | <b>1931</b> | <b>1932</b> | <b>1933</b> | <b>1934</b> | <b>1935</b> | <b>1936</b> | <b>1937</b> | <b>1938</b> | <b>Mean</b> |
|--------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Manufacturing                  | 7.9         | 5.7         | 5.4         | 5.9         | 8.6         | 7.4         | 8.8         | 9.5         | 12.5        | 9.1         |
| Electricity, Gas, Water Supply | 9.1         | 9.8         | 9.9         | 10.0        | 9.3         | 8.0         | 7.7         | 7.1         | 7.4         | 8.6         |
| Wholesale Trade                | 3.0         | -0.3        | -2          | 1.1         | 3.9         | 3.2         | 6.3         | 6.9         | 8.6         | 5.4         |
| Cultural / Rec Services        | 6.9         | 4.0         | 0.9         | 1.7         | 3.7         | 2.9         | 4           | 5.4         | 3.1         | 4.9         |

Source: *Australian Investment Digest* selected interwar years, extracted from Ville & Merrett, chart 4.



**Useful and interesting websites to visit:**

<http://www.econsources.com/Index.asp>

<http://www.q-squared.ca/index.html>

And for anyone missing ‘home’, or simply wanting to know what the ending of British Summer Time (BST), or other time zone adjustments, mean for the World clock:

<http://www.timeanddate.com/worldclock/>

**Brief suggestions for further reading:**

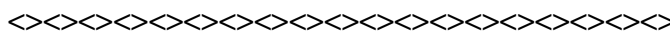
The Spring 2006 issue of the *Journal of Economic Perspectives* (Volume 20, Number 2), has a fascinating Symposium on Cultural Economics. Turn to the JEP to see some of the following papers:

*David Landes: Why Europe and the West? Why not China?*  
*Luigi Guiso, et.al.: Does Culture affect Economic Outcomes?*  
*Rachel McCleary and Robert Barro: Religion and Economy.*

Amongst the other articles please see:

*Richard Freeman's: People Flows in Globalization.*

The June 2006 issue of the *Journal of Economic Literature* (Volume XLIV, Number 2), has an extensive review of *Peter Isard's: Globalisation and the International Financial System: What's Wrong and What Can Be Done?*, by Barry Eichengreen.



## References

*Australian Investment Digest*, Sydney: Alex Jobson, various years from 1920.

Blainey, G. *The Rush That Never Ended: a History of Australian Mining*, Carlton, Vic.: Melbourne University Press, 2003.

Campbell, J. Y. “Consumption based asset pricing”, in G. M. Constantinides, M. Harris and R. Stulz (eds), *Handbook of the Economics of Finance, Volume 1B*, Netherlands: North-Holland, 2003.

Chandler, A. D. *Scale and Scope. The Dynamics of Industrial Capitalism*, Cambridge, MA: Harvard University Press, 1990.

Forster, C. *Industrial Development in Australia, 1920-1930*, Canberra: ANU Press, 1964.

Grossman, S. J. and R. J. Shiller, “The Determinants of the Variability of Stock Market Prices”, *American Economic Review* 71: 222-7, 1981.

Kocherlakota, N. R. “The Equity Premium: It’s Still a Puzzle”, *Journal of Economic Literature* 34 (1): 42-71, 1996.

Mehra, R. and E. C. Prescott, “The Equity Premium. A puzzle”, *Journal of Monetary Economics* 15: 145-61, 1985.

Mehra, R. and E. C. Prescott, “The equity premium in retrospect”, in G. M. Constantinides, M. Harris and R. Stulz (eds), *Handbook of the Economics of Finance, Volume 1B*, Netherlands: North-Holland, 2003.

Milward, A. S. *The Reconstruction of Western Europe, 1945-51*, Cambridge: Cambridge University Press, 1984.

Pope, D. “Private finance”, in W. Vamplew (ed.), *Australians. Historical Statistics*, Sydney: Fairfax, Syme and Weldon, 1987.

Shergold, P. “Prices and consumption”, in W. Vamplew ed. *Australians. Historical Statistics*, Sydney: Fairfax, Syme and Weldon, 1987.

Siegel, J. J. *Stocks for the Long Run. A Guide to Selecting Markets for Long Term Growth*, New York: Irwin, 1994.

Ville, S. and D. Merrett, “Business profitability and structural change in interwar Australia” (Australian Conference of Economists, University of Melbourne, 2005).

Waterman, A. M. C. *Economic Fluctuations in Australia, 1948-64*, Canberra: ANU Press, 1972).

\* **Dr. Simon Ville** is Professor in the School of Economics and Information Systems, University of Wollongong, specializing in the teaching and research of the economic and business history of Britain, Europe, Australia, and New Zealand. He is President of the Economic History Society of Australia and New Zealand and was editor of *Australian Economic History Review* (1997-2003). Recent publications include: *The Rural Entrepreneurs. A History of the Stock and Station Agent Industry in Australia and New Zealand* (Cambridge University Press, 2000), winner of the Bruce McComish prize for economic history; *The Development of Modern Business* (with G. Boyce) (Palgrave, 2002); *The Big End of Town: Big Business and Corporate Leadership in Twentieth-Century Australia* (with G. Fleming and D. Merrett) (Cambridge University Press, 2004). In 2005 he held an Australian Research Council (ARC) discovery project grant entitled: ‘Business Profitability and Long Term Industrial Change in Twentieth-Century Australia’.

\*\*\*\*\*

\* *The views expressed here are personal to the author and do not necessarily reflect those of the other staff, faculty or students of this or any other institution.*

\*\*\*\*\*



*The BNE is celebrating the electronic age by disbanding its print copy distribution list. This process began some time ago but is reaching its final stages now. All former print-copy readers are invited to join the electronic mailing alert service by contacting the editor at [dabirp@richmond.ac.uk](mailto:dabirp@richmond.ac.uk)*

\*\*\*\*\*

### **Book Review:**

*Ian A. Goldin, and Kenneth Reinert. (2006) *Globalisation for Development: Trade, Finance, Aid, Migration and Policy*, Published by the World Bank and Palgrave Macmillan, Washington. PP 328. ISBN 0-821-362-74-7.*

This book undertakes the very important task of clarifying the complicated links between globalisation and poverty reduction for a general reader. It does so by examining the impact of five dimensions on development: trade, aid, finance, migration and ideas. These are viewed as the main (largely economic) processes through which globalisation impacts on development. The book successfully demonstrates that under the right conditions, globalisation can be a successful driver of poverty reduction. However, in some instances and in the absence of the right policies, globalisation can actually exacerbate poverty.

The first chapter of the book provides the background and context for the book examining the history of globalisation, defining key concepts and identifying the main areas for action. Chapter two outlines the relationship between globalisation and poverty. It examines what has been happening to global poverty, according to a number of different measures and provides a brief summary of the important characteristics (such as scope and destination) of trade, investment, aid, and remittances. The proceeding five chapters explore the roles of the five main

dimensions of globalisation in reducing global poverty and stimulating development.

Chapter three examines the impact of trade on poverty. It examines its role in market expansion, improving competition and increasing productivity. Relevant examples from selected countries are provided. Chapter four discusses the role of finance. It documents recent trends in capital flows, noting the potential costs of capital flows (particularly for the poor) and the need to distinguish between different types of capital when evaluating their impact on poverty. Chapter five examines the history and changing type of foreign aid provided by international donors. It discusses where aid might be most effective and strategies for dealing with weak states. The chapter includes examples of foreign aid successes, its role in achieving the Millennium Development Goals and the importance of donor coordination. Chapter six looks at the history of global emigration and the characteristics of typical migrants. It analyses why they migrate and the positive and negative impacts that migration has on both the source and destination countries. Chapter seven examines the power of ideas in achieving development which the authors argue can be the most important driver of poverty reduction. The chapter includes a discussion on how ideas have changed regarding the roles of the state, market and institutions.

Finally Chapter eight concludes with a policy agenda, examining the main strategies which can assist the five dimensions of globalisation in impacting on poverty reduction and development. The authors classify different policy recommendations at the global, regional, national and local level.

The book is successful in coherently evaluating the conditions under which globalisation is good and bad for development and poverty reduction. Although there are a limited number of new ideas in the book, its major contribution is

providing an excellent summary of the main dimensions of globalisation and the policies which need to be implemented for globalisation to have a greater impact on the poor. It is well written and researched and easy to read. The book would benefit from more case study material, providing more real world examples of the impact of globalisation on the poor. This is particularly true of examples of where globalisation has not worked to better understand and demonstrate the reasons why. Given the enormity of the topics covered by the book and the issues with which it is concerned, some chapters are prevented from providing a great amount of detail and this is particularly true for the concluding chapter on the policy agenda. However, this weakness is also a strength since it makes the book very accessible and an excellent resource for students, academics, development practitioners and policy makers with an interest in globalisation and development.

*Simon Feeny*

### **ABOUT The Briefing Notes in Economics:**

The current series of the **Briefing Notes in Economics** has been published regularly since November 1992. The series continues to publish quality peer-reviewed papers. As with recent issues, some of those that are forthcoming will include conference listings and other information for anyone with an interest in economics.

As always information on joining the mailing list, submitting a paper for publication consideration and much else besides, appears on the web-site. Should you need more information on any of the above matters please write to *Dr. Parviz Dabir-Alai*, Editor – Briefing Notes in Economics, Department of Business & Economics, Richmond – The American International University in London, Queens Road, Richmond, Surrey TW10 6JP, UK. Fax: 44-20-8332 3050. Alternatively,

please send your e-mail to him at:  
[dabirp@richmond.ac.uk](mailto:dabirp@richmond.ac.uk)

## **Briefing Notes in Economics**

### **\* Call for Papers \***

<http://www.richmond.ac.uk/bne/>

The BNE is always keen to hear from prospective authors willing to write a short, self-contained, and preferably applied, piece for publication as a future issue. The series prides itself on giving the well-motivated author a rapid decision on his submission. The **Briefing Notes in Economics** attracts high quality contributions from authors around the world. This widely circulated research bulletin assures its authors a broad-based and influential readership. The **Briefing Notes in Economics** is indexed with the *Journal of Economic Literature*.

For further information please visit the BNE website at the following address:  
[www.richmond.ac.uk/bne/](http://www.richmond.ac.uk/bne/)

### *Previous authors have included:*

**Mak Arvin (Trent), Mark Baimbridge (Bradford), Alexandre Barros (Oxford), Amitrajeet Batabyal (Utah), William Boyes (Arizona State), Frank Chaloupka (Illinois), E. Ray Canterbury (Florida), Roger Clarke (Cardiff), Jean Drèze (LSE, Delhi), James Gapinski (Florida), Andrew Henley (Aberystwyth), Greg Hill (City of Seattle), Prabhat Jha (World Bank), Geeta Gandhi Kingdon (Oxford), Carmen Li (Essex), Robert Jones (Skidmore), Mehmet Odekon (Skidmore), Hans Singer (Sussex), Bob Wearing (Essex) and many others.**