

MPRA

Munich Personal RePEc Archive

Mysterious Socio-Economic Disturbances and Cyclical Fluctuations

Ayub, Mehar and Ahsanuddin, Muhammad

2003

Online at <https://mpa.ub.uni-muenchen.de/618/>

MPRA Paper No. 618, posted 30 Oct 2006 UTC

Mysterious Socio-Economic Disturbances and Cyclical Fluctuations

Dr. Ayub Mehar

Dean, Institute of Business and Technology Karachi

and

Ahsan-ud-Din

Lecturer, Department of Economics, University of Karachi

ABSTRACT

The mysterious and relatively less predictable cyclical fluctuations are known as 'Business Cycle' – one of the blackist in many black boxes in Economics. The patterns and ordering of the cyclical effects may vary for different economies. They depend on the socio-economic and political structure of the countries. The corporate arrangements, ownership structures, cash flows and employment are always affected in the recessions. The industrial and financial institutions – particularly, insurance companies, banks and securities firms - should always plan for their business with consideration of the patterns of business cycles.

I: Nature and Scope of Business Cycles:

The direction and growth of the economies can be decomposed in four different types of movements: seasonal variations, cyclical fluctuations, long-term trend and the accidental changes. Seasonal trends are short-term fluctuations depend on the fundamental characteristics of the different economies: patterns of crops, production of seasonal industries, periodical collection of public revenues, flow of remittances and periodical socio-economic activities during the year. Those predictable seasonal variations determine the short-terms up and down in the economy. Such fluctuations are varied from country to country. So far as long-term trends are concerned they are reflectors of the economic planning and policies of the authorities.

The mysterious and relatively less predictable are the cyclical fluctuations – ignoring the accidental changes, which are the consequences of unpredictable events. The cyclical fluctuations are the regular and continuous ups and downs in the world economy without apparent reasons. This regular fluctuation is known as 'Business Cycle' – one of the blackist in many black boxes in Economics.

The term 'Business Cycle' indicates the fluctuations in economic activity, which forms a regular pattern, with an expansion of business activity followed by contraction succeeded by further expansion. Such cycles occur about the secular or long-term trend path of output. The expansion and contraction phases of the cycles appear in all over the world. The world economies face the same side of cycle simultaneously. The term "Cycle" gives the misleading impression of a regular, up-and-down pattern in the economy. Yet cycles come in many different shapes and size. Since the Second World War, the shortest expansion has lasted only 12 months, the longest, in the 1960, 106 months. It is this variation that makes downturn of hard to predict. However, it is clear that economic expansions have become longer and contraction shorter. According to the International

Business Cycle Research Center at Columbia University, between 1854 and 1945 the average expansion lasted 29 months and the average contraction 21 months. But, since the Second World War, expansion has lasted almost twice as long, an average of 50 months, while contractions have shortened to an average of only 11 months.

Why do these cyclical fluctuations occur? The economists describe different theories. However, a fairly large majority of economists are agreed on the existence of the business cycles. Many hypotheses have been advanced as to the cause of the business cycle. Following theories in explanation of the causes of business cycles have been identified in the literature:

1. Purely monetary;
2. Over investment;
3. Changes in cost, horizontal maladjustments, and over indebtedness;
4. Under consumption;
5. Psychological factors; and
6. The harvest theories (relating agriculture and the business cycles, including the sun spot theories).

The recession is a phase of business cycle, which follows a peak and ends with the trough. A recession is considered a mild version of the phase unlike the slump, which is a severe version. It is important that recession, technical correction in the stock market, economic crisis and disasters are absolutely different phenomena. So, they have different characteristics.

The National Bureau of Economic Research in USA has measured the duration of US business cycles, from turning point to turning point from 1854 to the current date. These data are shown in the table: I. The length, strength and gravity of different cycles are varied. Sometimes accidental events - 1st world war, 2nd world war, US civil war, Korean and Vietnam wars, Y2K and 9/11 effects – have also been added in the cyclical effects of recession periods.

The recession in 1929-33 is considered the most severe recession in the known history, famously identified as 'great depression'. A series of financial panics converted the recession into a great depression in 1930. A fiscal crisis in Hungary had been observed in 1930. The government of Hungary adopted a badly managed price support scheme for wheat, which led to a loss of confidence by foreigners, who withdrew deposits and thus weakened the banking system. At the same time, in Austria, where there was a serious fiscal problem, the Austrian largest bank was unable to publish its annual accounts. This was an indicator of the bank's losses. As a result, withdrawals of the deposits from the banks began. Ultimately, the bank's assets have to be liquidated at vastly reduced depression prices. The government believed that it could not simply let Austria's largest bank fail. As the bank's losses became greater, the fiscal consequences of supporting it became graver. Austria, too, now had a fiscal problem. Germany that was next door yet had little capital participation in Austria. But depositors in German banks became nervous about Germany's banks and the currency.

In the great depression, the crises in the capital-importing countries of Central Europe and South America were followed by crises in industrialized countries. Britain had no fundamental banking problem, but British institutions suffered because some of their assets (Short-term loans to the borrowing countries) were frozen. So the speculations turned against the British currency. In September 1931 sterling was forced off the gold standard. Then the speculation affected the United States, where it led to a loss of international reserves as funds shifted out of dollars. Wave after wave of bank panics and closures followed until President Franklin Delano Roosevelt took the dollar off gold in March 1933. Then the remaining gold standard countries, Belgium, France, and Switzerland became vulnerable.

The existence and strength of the recession is usually gauged by the growth in GDP. However, GDP is not the only yardstick. The pattern of investment, stock market indexes, rate of inflation, rate of interest, exchange rate parity, employment situation, distribution of income, the level of poverty and the other economic and financial indicators are also affected in the recession. However, the pattern and ordering of the cyclical effects may be different for different economies. They depend on the socio economic and political structure of the countries. If a stock market is highly efficient, the cyclical change will be reflected in stock prices immediately. Otherwise, the reflection will be observed after the change in the corporate sales and profits.

Historical trends of international financial markets show that fluctuations in the stock markets are correlated with the economic boom and slump. But, the timing of bull in the stock market and the boom in the economy may not be coincided in some economies. Table: IV analyzes the correlation between worldwide cyclical fluctuations with the local stock markets. A bear market is defined as any decline of 15 percent or more in the all-share index. Similarly, a market is defined as a bull if the all-share index increased by 15 percent or more. In the light of this analysis, we concluded that recession in the world economies and bear in the world stock markets are appeared simultaneously. The stock markets of the United States and Britain show bearish trend at the time of economic recession. But the same is not observed in the Japanese stock market. Similarly, in the United States and Britain's stock markets bull appears before or on the time of economic boom. But, bull appears in the Japanese market after economic boom (or recovery).

II: Non-recessionary Economic Disturbances

Some analysts confuse the economic disaster and crises with the recession. The recession is a regular economic phenomenon and it is different from the economic and financial crises. The economic crises may be a result of the bad economic and political policies, but recession is not. Similarly, a recession is possible even in the presence of extremely good economic management and policies. If an economic problem is observed in a country at the boom or recovery stage in the global market, it will not be classified an impact of the recession or slump. Similarly, a decline in the business or observable weak indicators in the business and financial performance of a sector – local or worldwide – will not be considered as a part of recession. Recession affects all the sectors simultaneously.

Although, it has become a common practice that economic managers of a country and business managers of a firm blame the recession for every shortcoming in the economic and business policy or fundamental weaknesses. So, a clear difference between recession and structural problems should be identified for analysis and quantification of the impacts of a recession.

TABLE: I
BUSINESS CYCLES SINCE FREEDOM MOVEMENT OF 1857

No.	Reference Time		Duration (Months)	
	Peak	Trough (Depression)	Contraction (Peak to Trough)	Expansion (Trough to Next Peak)
1	June 1857	December, 1858	18	30
2	October 1860	June, 1861	8	22
3	April 1865	December, 1867	32 ^a	46 ^a
4	June 1869	December, 1870	18	18
5	October 1873	March 1879	65	34
6	March 1882	May 1885	38	36
7	March 1887	April 1888	13	22
8	July 1890	May 1891	10	27
9	January 1893	June 1894	17	20
10	December 1895	June 1897	18	18
11	June 1899	December, 1900	18	24
12	September 1902	August 1904	23	21
13	May 1907	June 1908	13	33
14	January 1910	January 1912	24	19
15	January 1913	December 1914	23	12
16	August 1918	March 1919	7 ^a	44 ^a
17	January 1920	July 1921	18	10
18	May 1923	July 1924	14	22
19	October 1926	November 1927	13	27
20	August 1929	March 1933	43	21
21	May 1937	June 1938	13	50
22	February 1945	October 1945	8 ^b	80 ^b
23	November 1948	October 1949	11	37
24	July 1953	May 1954	10	45
25	August 1957	April 1958	8	39
26	April 1960	February 1961	10	24
27	December 1969	November 1970	11 ^c	106 ^c
28	November 1973	March 1975	16	36
29	January 1980	July 1980	6	58
30	July 1981	November 1982	16	12
31	July 1990	March 1991	8	92
32	March 2001	November 2001	8	120

a: Civil War period

b: World War I and II

c: Korean War and Vietnam War

d: Excluding Y2K¹ effect

The decomposition of the impacts of a recession and an accidental event is too difficult – almost impossible – when they occurred simultaneously, like 1st and 2nd world wars, Korean and Vietnam wars, US civil war, Y2K, and 9/11 etc. However, a clear distinction is possible when an undesired event is happened in a non-recessionary period. Like, worldwide crises in the stock markets in March 1995 could not be considered as a recession; it was simply a crisis in the world economy, created by the cumulative effects of the following events:

- 1) The inflation in Mexican economy had increased to 42 percent from 7 percent, where the GDP growth rate had been reached at negative two percent from 3.5 percent in 1994. The economy had faced a trade deficit of \$29 billion as compared to \$2 billion in 1994. The local stock market index had been dropped at 1539 from 2094 in 1994. While, the exchange rate of Mexican peso in term of US dollar had increased to 7.85 from 5.0.
- 2) A heavy decline was observed in the Japanese Stock Market after the earthquake in Kobe.
- 3) The Barring Securities had been collapsed due to a famous transaction in derivatives in Singapore.
- 4) The low savings and deficit financing have been shown in the United States' budget.

As a result, the index of the New York Stock Exchange has been declined by 0.15 percent. The index declined by 2.56 percent in Hong Kong, 2.46 percent in Bangkok, 2 percent in Tokyo and 1.7 percent in Singapore. However, the index of London Stock Exchange rose by 0.5 percent. All the above events created a worldwide economic crisis, so a worldwide decline in the stock markets was observed. But, world economic growth was not declined, because this temporary crisis was not a part of business cycle. So it was not identified as a recession.

Similarly, the worldwide impact of the Asian Crises in 1997 was not recognized as a part of the cyclical fluctuation. Until the middle of 1997 Asia was the growth center of the global economy. However, currency crises, which were triggered in Thailand in July 1997, spread immediately to other countries. Record-breaking minus figures were registered in Indonesia, Thailand, Malaysia and Korea, which were considerably affected by currency crises. Russian economic crises have also been reflected in its currency crisis. Russia financed its deficit account through public borrowing. The Russian bonds have been launched in the international market. The Namura Securities of Japan played a key role in the sale of Russian bonds. However, a huge loss of \$1 billion has to be born by the Namura. This loss transferred the effects of the crises into Japan.

In both the above-mentioned cases, banking and fiscal problems were eventually merged. All the troubles eventually had some thing in common __ falling commodity prices and fundamentally flawed banking systems and then changes in monetary and fiscal policies.

The cobweb of commodity prices, unsold inventories, banking flaws, financial markets' turmoil and changes in macro economic policies have produced panic in both the cases.

TABLE II
A BIRD EYE'S VIEW OF CUT IN THE EMPLOYMENT

Country /Company	Persons terminated
World	10,000,000
Russia	8,400,000
USA	625,000
China: Textile	450,000
South Korea	217,000
Philips (International)	80,000
USA: Boeing	48,000
Sweden (Ericsson)	10,000
Pakistan: Sindh Municipalities	6,500
Merrill Lynch	3,400
USA: Texaco Oil	2,000
Pakistan: Hino Pak	250
Pakistan: Shell	145
Pakistan: Phillips	140

The impact of Asian Crisis in 1997 can be measured by the phenomenon that the numbers of absolute poor in the world have been increased by 6 million, because of that recession. This non-recessionary crisis had added 10 million unemployed in the pool of 140 million jobless people in world. The unemployment was classified as a number one economic problem in the world. Social unrest has also increased in many countries. Ten millions people have lost their jobs and even their homes in that turmoil. The large chunks of the middle class in Asia (excluding Russia and Brazil) have lost their sense of ownership of their political system.

It is important that trade is not the only and not the primary transmission mechanism for international shocks. Even if we consider the effect of Asian crises on global trade, the United States economy was affected seriously. Thirty percent of the United States' total exports at that time had gone to the Asian economies. This share was 40 percent if we add the US exports of farm's products.

This was an interesting phenomenon that the 1997 crisis had badly affected the large companies in the United States of America, but the smaller companies in Indian economy. It had been claimed that the United States had a protection mechanism against the adverse effects of a recession. However, the United States economy was not ready to handle the adverse effects of the Asian crisis in 1997. The corporate management in the United States faced a severe liquidity trap. However, the sales and profits of Indian companies have increased during the crisis. The Indian companies had managed the problem of large inventories' volume through lower growth in industrial production.

The economic, financial and social impacts of the Asian Crisis in 1997 have been summarized in table: III. The recommended or implemented policies by the governments have also been indicated in this table. Different economies have been affected by this crisis in different ways. The economic managers have also adopted different policies to deal with the problem. However, the role of the International Monetary Fund (IMF) during the Asian Crisis has some question marks. The Fund had recommended the demand management policies in a large number of cases. This type of policies emphasize on the tight fiscal control and contraction in the money supply. They ultimately lead the unemployment in short-term. The IMF director for Asia has admitted that the fund would not had recommended such tightening policies during the crisis. The IMF admitted that it had drastically underestimated the extent of the crisis.

III: Contemplation of the Policy Measures

World depressions destroy economic and political stability. In the past, the depressions have been changing the economic and political map of the world. They frequently led to a vicious circle of wars, regionalism, the disintegration of states, and income disparities. The corporate set up, ownership structure and employment are always affected in the recessions. Since 1930s government intervention has been used to try to influence the timing and help dampen the intensity of business cycles. To deal with the recession the World Bank adopts a twin-track approach, which focuses on restructuring financial and corporate sectors and on social protection of the vulnerable groups during the crisis.

It is important for the planners that economies go into the slump with a higher speed as compare to their speed during the recovery. So, a V-shaped recovery should not be expected. There is no particular magic policy but we should not wait for a miracle. The changes take time and we will have to rebuild the confidence.

There are several recommendations for the softening of a business cycle. They include the shift in output from manufacturing to services, which tend to be less cyclical; the bigger role of governments, which unlike firms, do not slash job during recessions, unemployment benefits, that protect the poor in downturns; government deposit insurance, which help to prevent banking crises; and better inventory control through just-in-time technique.

It is obvious that the industries or suppliers of inelastic goods are less affected in the recession. But, luxurious of life and capital goods' industries are affected at large. The services industries - especially financial institution - are badly affected in recession period. The insurance companies, banks and securities firms should always plan for their business with consideration of the pattern of business cycles.

Economists always favor the expansionary policies to overcome the negative impacts of the recession. The government spending should be increased during the recession. More employment opportunities should be created in the public sector; more subsidies and allowances, low interest rate and soft credit facilities should be offered during the recession. India, Japan, China, Taiwan and South Korea have been adopting these policies during the last recession. But, in Pakistan, the privatization, downsizing, control

over budget deficit and tight monetary policies have been adopted. The World Bank categorically recommended that control over the inflation during the recession by the government of Pakistan would create the lower investment growth in the economy. The World Bank indicated that anti-inflationary policies during the recession would be a cause of lower growth, while the higher growth in GDP is one of the required outcomes for Pakistan. A 7 percent GDP growth was recommended to reduce the poverty in South Asia.

It is important that recession is not always bad. Some economies and companies get benefits from it. For instance, India had got large economic benefits from the recession in 2001. A positive and higher growth rate during the recession had attracted the investors at the time when there were no good opportunities in other avenues. The credit of this growth is no doubt, goes to the India economic managers and policy makers. Sooner the recession started India adopted an expansionary policy. The Reserve Bank of India had announced the lower interest rate and soft credit terms in its credit policy. The United States and other countries had also adopted the expansionary policies. But it was surprising that a contractionary policy had been adopted in Pakistan and even the International Monetary Fund (IMF) emphasized the implementation of this policy in Pakistan.

Economic managers in Pakistan have always been blaming the recession and other exogenous factors for the economic problems. But, the last recession has produced, at least, three positive consequences for the economy of Pakistan:

- 1) The cost of imports has decreased because of the reduction in oil prices. As a result, the balance of trade was improved.
- 2) The benefit of reduction in oil prices was not transferred to the consumers. So, public revenue had increased despite of a worldwide recession.
- 3) The lower demand for goods and services reduced the rate of inflation.

The table: V envisages that the economic growth in Pakistan has not been directly correlated with the worldwide recessions over the time. It was observed that the economy of Pakistan goes into a slump before a worldwide recession and into recovery phase before a worldwide expansion. This phenomenon is based on the following two propositions:

- 1) The worldwide recession does not affect the production, supply and demand of agricultural products, which are the major component of the Gross Domestic Product in Pakistan.
- 2) When the world economy goes into recession, the consumers shift to low priced commodities. So, the volume of exports from Pakistan is not affected as compared to the exports from industrialized countries.

The economic managers and large financial institutions should organize the research to forecast the time and strength of the business cycles. Not only the disclosure of the

expected time and strength of the recession but financial planning to control over its effects is also required. The need of economic research is enhanced in recession, because of the preparation of a strategy for survival, situation analysis for short-term and planning for long-term. However, it is a common observation that confused management of the financial institutions reduces - or even shut downs - their research activities. If research activities were genuinely being performed, the losses will be enhanced by the closure of research activities. However, if research activities substitute the public relations' functioning through distribution and reproduction of the publicly provided data and information to the prospective clients, then such expenditures must be curtailed in the recession period. Because, there are less chances to make new clients during the recession.

TABLE: III
WORLDWIDE IMPACTS OF THE ASIAN CRISIS: A BIRD'S EYE VIEW

Country	Economic Impacts	Financial Impacts	Social Impacts	Policy adopted by the government
USA	<ul style="list-style-type: none"> Record high growth in inventories (\$1.00 billion) Significant decrease in exports GDP growth decrease to 2% from 8% 	<ul style="list-style-type: none"> Share prices decreased by 15-20% Outflow of Investment Large number of mergers Profits of top 1500 decreased 	<ul style="list-style-type: none"> Large firms stopped the cash bonus payments to the employees 	<ul style="list-style-type: none"> Utilization of the surplus revenue
Russia	<ul style="list-style-type: none"> Negative (-10%) growth rate 56% inflation 	<ul style="list-style-type: none"> High devaluation in currency 60% interest rate 	<ul style="list-style-type: none"> 1,13,000 children have been left by their parents 8.6 million persons became job less. 1,500 persons has suicide 	<ul style="list-style-type: none"> Moratorium and then default
Japan	<ul style="list-style-type: none"> All the economic indicators show a worst position. 	<ul style="list-style-type: none"> Huge losses in business Namura Securities earned a loss of \$1 billion Decline in stock index 	<ul style="list-style-type: none"> Mass unemployment 	<ul style="list-style-type: none"> Tax cut policy A huge package for business sector Issuance of coupons for the protection of poor
China	<ul style="list-style-type: none"> Deflation (1.1%) Growth in industrial production is higher than GDP growth 	_____	<ul style="list-style-type: none"> Unemployment rate has increased 	<ul style="list-style-type: none"> Unemployment fund and developing work financed by public borrowing
Hong Kong	<ul style="list-style-type: none"> Negative (-5.2%) growth in GDP Negative trade balance 	_____	<ul style="list-style-type: none"> Unemployment rate has been reached at 5.5% from 2.5 % 	_____
India	<ul style="list-style-type: none"> 16% inflation Depreciation in currency 	<ul style="list-style-type: none"> Small companies have been more affected 50% listed companies had faced a risk of survival 	<ul style="list-style-type: none"> Un-employment and deporting of Indian immigrants from UAE 	<ul style="list-style-type: none"> Expansionary Monetary policy Capital Adequacy ratio has been increased Cut in interest rate
South Korea	<ul style="list-style-type: none"> Negative growth rate (-6.8%) 	<ul style="list-style-type: none"> Currency devaluation 	<ul style="list-style-type: none"> Mass unemployment 	<ul style="list-style-type: none"> Arrangement of Temporary work for 1.54 million jobless.
Taiwan	<ul style="list-style-type: none"> Forex reserves have decreased 	_____	<ul style="list-style-type: none"> 6,000 firms have been shut down 	<ul style="list-style-type: none"> TS\$120 billion loan for local business sector
Kuwait, UAE & Saudi Arabia	<ul style="list-style-type: none"> Decrease in oil prices Decrease in Public revenues 	_____	<ul style="list-style-type: none"> Unemployment Lower profits 	<ul style="list-style-type: none"> Deport of immigrants Deficit financing Incentives for local investors

TABLE: IV
TIME CORRELATION BETWEEN BUSINESS CYCLES AND STOCK MARKETS

Year	Boom in World Economies	Bull in the Stock Market				Recession in World Economies	Bear in the Stock Market			
		World	Japan	UK	USA		World	Japan	UK	USA
1944		+++								
1945										
1946					+++					
1947				+++						
1948	+++									
1949			+++			+++	+++	+++	+++	+++
1950								+++		
1951				+++						
1952								+++		
1953	+++		+++					+++		
1954						+++				
1955				+++						
1956					+++					
1957	+++		+++					+++		+++
1958						+++			+++	
1959										
1960	+++									
1961		+++	+++	+++	+++	+++				
1962							+++		+++	+++
1963										
1964										
1965								+++		
1966				+++	+++				+++	+++
1967										
1968					+++					
1969	+++	+++		+++						
1970			+++			+++	+++	+++	+++	+++
1971										
1972				+++						
1973	+++	+++	+++		+++					
1974							+++	+++	+++	+++
1975						+++				
1976				+++	+++				+++	
1977										
1978										+++
1979				+++					+++	
1980	+++				+++					
1981	+++	+++		+++					+++	
1982						+++	+++			+++
1983										
1984										
1985										
1986										
1987		+++	+++	+++	+++	+++		+++	+++	+++
1988								+++		
1989			+++	+++						
1990	+++	+++			+++	+++		+++	+++	+++

TABLE: IV (Continue)
TIME CORRELATION BETWEEN BUSINESS CYCLES AND STOCK MARKETS

Year	Boom in World Economies	Bull in the Stock Market				Recession in World Economies +++	Bear in the Stock Market			
1991										
1992				+++					+++	
1993										
1994				+++					+++	
1995								+++		
1996			+++							
1997										
1998		+++		+++	+++	+++	+++	+++	+++	+++
1999		+++	+++	+++	+++					
2000								+++		
2001	+++					+++	+++	+++	+++	+++
2002							+++	+++	+++	+++
2003										
2004							+++	+++	+++	+++
Total	10	9	10	16	12	11	11	13	18	14

TABLE: V
THE PAKISTAN ECONOMY DURING THE WORLDWIDE RECESSION

Recession (Trough)	Annual Growth in GDP in the year of:		
	Before trough	Trough	After trough
May 1954	1.72	10.22	2.03
April 1958	2.98	2.54	2.47
February 1961	0.88	4.89	6.01
November 1970	6.49	9.79	1.23
March 1975	7.45	3.88	3.25
July 1980	5.53	7.33	6.40
November 1982	6.40	7.20	6.72
March 1991	6.00	5.57	7.71
November 2001	3.9	2.2	3.4

REFERENCES

- Nelson, C.R (1987); “ Investors’ Guide to Economic Indicators”; New York: John Wiley and Sons, 1987
- Auerbach, A.J. (1982); “The Index of Leading Indicators: Measurement Without Theory 35 Years Later”; The Review of Economic and Statistics; November 1982
- Hildebrand, G (1992); “Business Cycles: Indicators and Measures”; Chicago, Bank Administration Institute, 1992
- Mitchell, W.C. (1927); Business Cycles: The Problems and Its Setting”; Berkeley: University of California Press, 1927
- Mitchell, W.C. (1951); “What Happens During Business Cycles: A Progress Report”; Berkeley: University of California Press, 1951
- Schumpeter, J.A. (1981); “Business Cycles: A Theoretical, Historical and Statistical Analysis of the Capitalist Process”; Philadelphia: Porcupine Press Inc., 1981
- Mehar, Ayub (1999); “History and Nature of Economic Recession”; Business Recorder Karachi, 1999
- National Bureau of Economic Research (2003); “ Business Cycles Information”; Cambridge Public Information Office, 2003