Economics: Fumbling Around in the Dark

Colm Green – Junior Sophister

The perennial question of the claim of economics to scientific status is addressed by Colm Green. In this context, the contribution of econometrics is evaluated, and a comparison is made between economics and psychology. He concludes that although economics cannot be attributed the appellation 'scientific', this in no way invalidates the value of the contribution it can make.

"Sometimes I just don't know what's going on, things are so strange and change so quickly, I'll think I'll go and lie down"- Eeyore the Donkey.

"I'll tell you what I want/ what I really really want/ I really really really want to zigga-zig-ahhh"- The Spice Girls.

These two disparate quotes, while not drawn from the top drawer of economic theory, shed considerable light on the two major problems that stand between economics and scientific status. The first is that the world in which Eeyore lives, and in which we live, is indeed a very complicated one and the vast churning economy that exists within it would make poor Eeyore's head explode. The second one is that economics makes rather crude simplistic assumptions about what people want, in what way they will behave and that they will behave in that fashion. If the Spice Girls were particularly clear about what they wanted, and certain that they were going to tell us, the clearest thing of all is that there is no way of knowing what it is exactly they want.

What is a science? What do we want from it? There are a number of theorists and philosophers that have made a name for themselves writing on this very topic. One noted commentator on matters scientific is Karl Popper. His major contribution to the scientific theory debate was that a science was a set of theories, which could be refuted, or empirically tested. He was followed by Lacatos who said that there were often competing strands within the discipline who carried out science as part of research projects (schools of economic thought) and as one or other of these strands were falsified, another theory would come along and take their place.

Another philosopher, Feyerabend, said that people sought to seek the truth from science. However science could not provide us with the absolute truth. He sighted the case of Newtonian mechanics which many took to be the absolute truth, yet it in turn was supplanted by quantum mechanics. Since traditional science, he claimed, could not provide the absolute truth, he suggested that it was no more valid than any of the myths it replaced. This is to put penicillin on a par with the tooth-fairy, and while the argument may be logically elegant, it is not very practical. It would also be asking quite a lot of a science to give us the absolute truth (the existence of which is another doctoral thesis altogether). Instead, we seek that science gives us an ever closer and closer approximation to the truth. What must be ascertained is whether or not economics can bring us nearer and nearer to this truth.

This leads us on to economics, which certainly can be described as a set of theories. However to be classified as a science, it must be empirically testable and the theories must have predictive power. This is where econometrics enters the fray. Econometrics is the means by which the attempt is made to give these theories an empirical basis. However it must do this without the benefit of the controlled experiment so beloved of the physical sciences. This means that the econometrician cannot properly determine which factors are involved in influencing the phenomena that are the subject of the theory being tested.

The first stage in econometrics is a simple statement of the theory to be tested. This is where the first problem arises. Economic phenomena are really complicated, and therefore the likelihood that a small but significant aspect may be overlooked is great. Secondly the theory is stated in a mathematical formula. This is where the second problem arises. Economic phenomena are invariably very complex. The mathematical formulae, which describe them, are unlikely to capture the subtleties of the phenomena that they are trying to describe. A tiny, inherent flaw at this stage, given the numbers of measurements required to make the test valid, would render the whole procedure meaningless as regards valid empirical testing.

The next step is to alter this rather dubious mathematical equation into something that may lend itself to empirical testing. This is done by such procedures as adding a variable to account for random variations due to factors which are outside the model. This attempt to fudge the first problem only leads to more inaccuracies that continue to accumulate. The idea that errors can be used to compensate each other is described by Popper as a logical patch, a *post hoc* means of making the facts fit the theory, and therefore rather unscientific.

So far there have been three problems, each of which has stemmed from the incredibly complicated nature of things. The fourth stage is obtaining the data. However, the pitfalls involved in obtaining the relevant data are numerous. This problem leaves the data open to all forms of observational biases. The next stage is to estimate the parameters of the econometric model from the data. This is also quite tricky, as it depends on the original assumptions made and other technical considerations.

The main consideration is that the techniques used often depend on regression analysis. This type of analysis depends on the assumption that because two factors can be correlated (the hypothesis and the actual cause) they can be causally linked. This is not true as demonstrated in a study by William Smith of Cardiff University which found an almost perfect correlation between the sales of lollipops and the levels of teenage pregnancies. It would require a great leap of faith and logic to suggest that there was a causal link.

What we have seen is that the technical considerations involved in econometrics, all stem from the difficulties outlined by Eeyore regarding the insanely complicated nature of the world. There is another entirely different set of problems that undermine the basis of the economic theories themselves. This is that economics is concerned with the behaviour of people. If the complexity of the economy makes it difficult for economics to be seen as a science then it should be made clear that human behaviour is just as complicated and just as unpredictable as the economy. Another thing, which should be made clear is that even less can be stated with ‘scientific' certainty about human patterns of behaviour. The problem, as any person involved in the field of psychology will tell you, is that it is exceptionally difficult to make any assumption about people's behaviour based on what they tell you.

To hark back to the quotation at the beginning of the essay, the Spice Girls were willing to tell you what they wanted- which is not always the case in psychological research. However, what they want is unclear. Also there is the problem which has dogged psychology since its onset - do they actually want what they tell you they want?

There are many similarities between economics and psychology. Both have sets of theories, which are adhered to by their supporters even when they have been proved to be more than slightly suspect. Neither can call upon controlled experiments- they are impossible in economics, and incredibly unethical in psychology- and they both have to deal with hugely complicated topics in attempting to explain everything to do with human behaviour, albeit from slightly different viewpoints.

Neither can actually be described as a science. Instead they can be viewed as a slightly looser analysis of these topics. An appropriate analogy is that of the activity of football punditry. Before every match, pundits on television will give their considered opinion on how the match will go, drawing on underlying theories dictating how they think the game works (just like the neo-classical school of economics or the Freudian school of psycho - analysis) and their knowledge of the teams' form (the equivalent of econometrics or psychological nosology). They cannot make a science of it because the events on the football field are incredibly complex and random and subject to so many variables - just like economics and psychology. This, however, does not stop them making useful and accurate predictions.

In conclusion, just because psychologists have no idea what causes mental illnesses, how they work, and even how to define them, and ultimately because they lack a scientific methodology, this *does not* mean that clinical psychologists cannot help patients through their nosology (essentially common-sense and intuition) and prescribe a treatment which may work. Similarly, while economics may not be scientific, it does not prevent economists making some sort of analysis of the factors which affect our lives. Also the scientifically flawed methodology of econometrics does provide us with useful, if inexact estimates, which are at least partially accurate. In summation, economics is not a science in the truest sense of the word. However, just because we do not have the torch of scientific status to help us to find the ‘truth', this does not mean that we should not fumble around in the dark with economics and econometrics.

Bibliography

Feyerabend, P. (1987), *Farewell to Reason*. Verso Press: London.

Gujarati, D.N. (1995), *Basic Econometrics*. Mc Graw-Hill: London.

Hutton, W. (1998), *The Stakeholding Society*. Polity Press.

Milne, A.A. (1936) *Winnie-the-Pooh and the house on Pooh Corner.* Faber and Faber: London.

Ruyon & Haber (1995), *Fundamentals of Psychological Methodology.*

Schlipp, P. A. (ed.) (1974), *The philosophy of Karl Popper*. Illinois: Open court.

The Spice Girls (1996) *Wannabe*. Virgin Music Publishing: London.

University Attendance: An Econometric Analysis

Vinay Nair – Junior Sophister

In the past twenty years, the numbers of students attending Irish universities has increased at a dramatic rate. Vinay Nair utilises econometric analysis to examine some of the factors underlying this increase, measures their explanatory power and compares the empirical results to theoretical reasoning.

Introduction

Full-time Undergraduate students

Since 1980, the number of full-time students attending Irish universities has increased by 270%, from around 23,000 to over 62,000 in 1997. The ethos of the populace in the early 1980s was that university education was merely for a selected few. Now, with an increasing amount of students staying on to further stages of education, coupled with a burgeoning economy, it appears that not only have numbers increased, but perspectives have also broadened. However, is this truly the case? In this essay, I hope to determine why the number of places has increased so rapidly and if (and to what degree) the aforementioned factors have affected it.

I will begin by specifying my dependent variable, my two independent variables and my dummy variable, outlining why I selected them in particular. I shall then estimate the model and evaluate the results of my regressions. Finally, I shall draw conclusions from my model, from the analyses that I have carried out.

Specification

In order to determine the cause of the increasing numbers attending Universities in Ireland, I have selected the following variables.

Dependent Variable (Y)

For my dependent variable, variations in which I wish to explain, I have chosen *the number of students attending Irish universities (HEA Institutions).* My first statistic is for 1980/81. The statistic for the most recent academic year (i.e. the present one – 1998/1999) are still unavailable and hence the final statistic is for 1997/98.

First Independent Variable (X_1)

The first independent (explanatory) variable that I have chosen is the *number of students sitting the Leaving Certificate*. The vast majority of students (over 90%) going on to study in Irish Universities obtained the Irish Leaving Cert. From first principles, I would expect a high positive correlation between this and the dependent variable.

Second Independent Variable (X_2)

The second independent (explanatory) variable I have chosen is the *GNP per capita.* The level was adjusted for 1990 prices, to adjust for inflationary pressures in the economy. From economic theory, I would expect that there is a positive income effect

for University places: as incomes go up, so too would the demand for the places. Therefore, one would again expect a high positive correlation (if perhaps not as high as for X_1.

Dummy Variable (D)

In early 1995, the Labour Minister for Education, Niamh Breathnach, introduced free fees for Third Level institutions. This radical proposal was implemented as half-fees for 1995/96, but free-fees have been the policy ever since. For the purposes of this study, since the principle was in effect, 1995 is considered a year of 'free fees'. Hence, from 1980 to 1994, the dummy is allocated a value of "0", whereas 1995 to 1997 have been given a value of "1". Again, I anticipate a positive correlation between the number of students attending university and the introduction of free fees.

It is valuable to have expectations of one's results before carrying out regressions. However, one must balance these expectations with the temptation to manipulate the data set so as to ensure these expectations are realised (a practice often carried out in econometrics). Indeed, this problem of 'data mining' by econometricians is one of the greatest reasons that business forecasts now often supersede econometric forecasts in many professional circles.

Omitted Variables, Residual term

In this analysis, considering the various restraints, some independent variables, such as the increasing number of non-nationals occupying places, had to be omitted. The analysis does include, however, a disturbance / stochastic term, which is effectively like a basket in which all effects on Y that are not explained by X_1 and X_2 are contained. These residuals could occur in three main ways:

1. Omission of the influence of innumerable chance events,
2. Measurement error,
3. Human indeterminacy.

Line of best fit

The method of estimation used in this analysis is Ordinary Least Squares. From the estimates, one can construct a line of best fit, based on the multiple regression model:

$$Y = b_1X_1 + b_2X_2 + b_3D + m$$

This method allows us to see the relationship between the variables X_1 and X_2 and the dummy variable, by estimating the sign and size of b_1, b_2 and b_3 (b_0=0, due to inclusion of the dummy variable). The aforementioned stochastic term will be measured by m .

Using the Econometrics computer package, *Microfit*, my line of best fit was found to be:

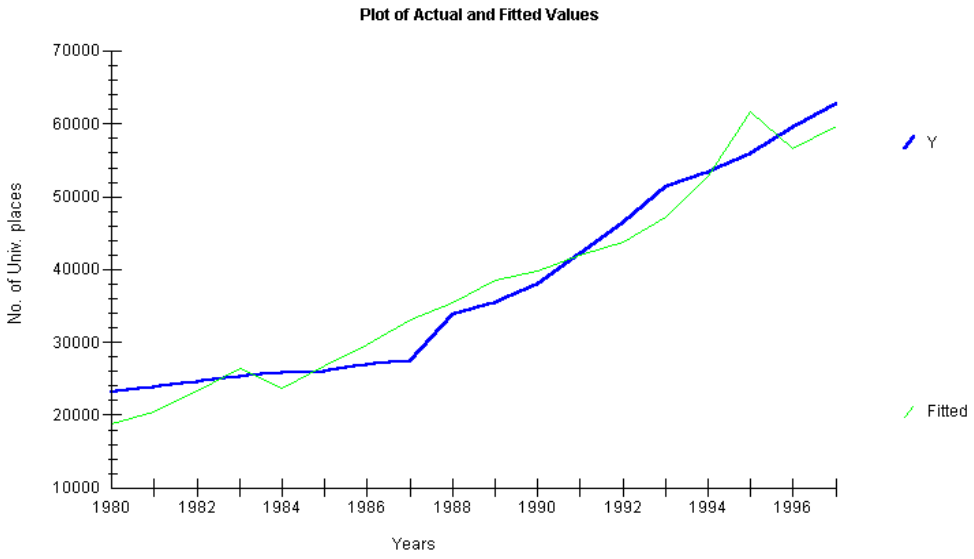
$$Y = 0.77572\ X_1 - 4.5684\ X_2 + 8167.3\ D$$

Estimation and Evaluation

R^2

I found the correlation between the variables to be extremely high at 94% (correlation coefficient = 0.94663). An adjusted R^2, R-bar-squared, which is less biased than R^2,

was found to be 0.93520; again, this is a very high figure. This high correlation is quite clearly seen from the following graph:



Indep. Variable	Coefficient	T-statistic	Probability
X_1	0.77572	4.1462	0.001
X_2	-4.5684	-1.9690	0.069
D	8167.3	2.6660	0.018

X_1, X_2, and D

Having seen the high correlation of all the variables, it was important to evaluate what were the *individual* explanatory powers of X_1 and X_2 (with D), as multicollinearity could still undermine the high R^2 (this will be discussed later).

Regressing Y on X_1: $Y = 0.42159\ X_1 + 6515.2\ D$

$R^2 = 0.93185$ t-statistic = 7.4958

Regressing Y on X_2: $Y = 4.6798\ X_2 + 3309.9\ D$

$R^2 = 0.88110$ t-statistic = 5.0794

Possible Multicollinearity

Multicollinearity is always a possibility in multiple regression. Particularly due to the fact that the sign of the coefficient of X_2 changed from the multiple to the single regression, I regressed X_1 on X_2, the standard check for multicollinearity. I found R^2 to be 0.71409. This is quite a high correlation for the two variables. Therefore,

coupled with the changing sign, there is implied significant multicollinearity between my variables.

Predictions vs. Outcomes of coefficients

My predictions were for the coefficients to be positive and large. Let me now evaluate how this compares to our results. From earlier, my line of best fit is:

$$Y = 0.77572\ X_1 - 4.5684\ X_2 + 8167.3\ D$$

Whilst we see that X_1 and D did indeed have their anticipated positive correlation, we duly note X_2 has a negative correlation in the multiple regression.

What does this mean? This means that increasing GNP per capita has had an inverse affect on the number of students attending university. As stated earlier, we expected a positive income effect, whereby an increase in the number of students would result from an increase in income. Hence, this negative value contradicts economic theory. However, in the simple regression, the coefficient is a positive value.

I believe that a large reason that this value in the multiple regression occurs is due to multicollinearity between the variables and/or a significant omission from my model.

T- statistic

The t-statistic (or "T-Ratio" in *Microfit*), is the "value of the parameter estimate divided by its estimated standard deviation (the standard error)". In the multiple regression case, X_1 is statistically significant at the 5% and 10% levels; indeed, it is even significant at the 1% level. However, X_2 is only statistically significant at the 10% level (value » 2). Again, the aforementioned multicollinearity may explain this result. The dummy variable is also statistically significant at the 5% and 10% levels.

F-statistic

The F-statistic of 82.7760 is high, at zero-probability. This again demonstrates that we can reject any hypothesis that this model has no explanatory power, i.e. that $b_1=0$, $b_2=0$ and $b_3=0$.

Durbin-Watson test

The DW-statistic for my model was 1.2194. This value falls between the d_L and d_U limits. This suggests that I cannot ascertain the level of autocorrelation. Naturally, I would have preferred no autocorrelation. Hence, in an attempt to overcome this, I lagged my X_1 variable by 3 years (the median length of a university degree). My DW-statistic fell dramatically to 0.65400.

Forecasting powers

I omitted Y variables in 1996 and 1997, to see if my model had forecasting ability. Unfortunately, the forecasts of values of 58203 in 1996 (s of error 6045.7) and 58617 in 1997 (s of error 5268.8) were considerably off the actual values of 59651 and 62660 respectively.

Trinity College

Purely for the sake of interest, I conducted a simple regression of the Y variable (number of students attending Irish universities) on the number of new students enrolling in Trinity (X_3), to see if there was any explanatory power. Interestingly, I obtained a rather high R^2 value of 0.98697. This high value probably just shows how much of a pacesetter Trinity was and continues to be for the rest of the country!

Conclusion

This model undoubtedly has sound explanatory variables. In analysing the number of students attending Irish universities, I evaluated the number of students sitting the Leaving Cert., the (increasing) GNP per capita and looked at the impact the introduction of free fees has made. There is a definite correlation between these explanatory variables and my dependent variable – approximately 95%. However, whilst Leaving Cert. students and free fees had the anticipated positive correlation, we saw that, whilst statistically significant at 10%, GNP per capita had a negative correlation to student attendance in multiple regression, yet a positive correlation in a simple regression. This implied two things: (i) the existence of multicollinearity between the variables and (ii) a possible significant omission from my model. Despite this, overall my model, (as shown by t-test and F-test), demonstrates the importance of the role Leaving Cert. students, GNP per capita and the introduction of free fees have had on the number of students attending Irish Universities.

Bibliography

Department of Education (various years) *Statistical Summary* 1981-1998. CSO.

Gujurati, Damodar (1995) *Basic Econometrics*. McGraw-Hill: Singapore.

Kennedy, Peter (1992) *A Guide to Econometrics.* Blackwell: Oxford.

Statistical Abstract 1981-1997. CSO.

TCD "Student Statistics" 1981-1998. Records Office, TCD.

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TCD Records Office.

Statistics Section, Department of Education.

An Inquiry into Adoption Rates in Ireland

ohn Murnane – Junior Sophister

The extension of econometrics to social theory is demonstrated by John Murnane's examination of the factors behind the declining adoption rates in Ireland since the 1970s. He looks at the changing social attitudes that have led to this fall and seeks to evaluate them using the classic technique of Ordinary Least Squares.

Introduction

Thirty years after it was passed in England, Wales and Northern Ireland, the Adoption Act (1952) was promulgated into Irish law. Initially Irish residents were slow on its uptake, but the practice of adoption peaked in 1967 when 97% of all non-marital births were adopted. Since this, however, various factors have resulted in significant changes in adoption practices. By 1997, 405 children were placed for adoption. The preliminary figure for 1998 is just 100.

> "*Never before has the adoption service faced such formidable challenge and pressure to change its institutionalised assumptions and conventional beliefs as it has in recent years. The impetus for change in the traditional structure of adoptive kinship came from ... demographic changes in adoptable infant and adoptive applicants, human rights and freedom of information legislation, recognition of adoptees rights, advances in biotechnology and changing social attitudes*".

The aim of this project is to see if by using regression analysis we can specify the explanatory variables that have influenced adoption rates and to explore the significance of these variables. Sachedeu gives a very concise view on why adoption practices face the current famine, but from an econometrics perspective it is not feasible to construct a model which incorporates these factors. For the sake of simplicity, I have chosen just two of the relevant variables to aid my study of adoption rates in Ireland.

Specification

With the aim of explaining the falling number of adoptions in Ireland between 1970 and 1995 I have chosen the following variables:

Dependant variable: Y

For the Y variable, variations in which I wish to explain, I am taking adoption orders placed from 1970 to 1995 inclusive. Records on adoption orders are available since 1953, and the statistics were obtained from the Irish adoption board in their 1997 annual report. There is very little chance of inaccurate data. All legal adoptions, whether through regional authorities or the judicial process, are recorded by the adoption board in its report.

Independent variables: X1 and X2

X1: The number of abortions carried out on Irish women in British clinics

Abortion and the law has always been a grey area. Abortion itself was not explicitly banned under the 1937 constitution, though a prohibition was implied. The 8th amendment to the Constitution in 1983 did just this but not as categorically as its

promoters had hoped, so that when the X-case came about in 1992 the Supreme Court made an unexpected decision. It overturned an injunction imposed by the High Court and permitted a 14-year-old rape victim to travel to England to have an abortion. This landmark decision was reached on the premise that continued pregnancy posed a serious risk to the life of the mother, as she was suicidal. As this precedent was set, it is now possible for a pregnant woman to have an abortion in Ireland if there is a real threat to her life.

Initially the accuracy of the statistics seemed a concern. They come directly from the clinics in England and in that sense are very reliable. But the problem lies in the fact that it is commonly noted that a substantial number of Irish women do not give their Irish address, which therefore leads to inaccurate data. Assuming that the percentage of women who give false addresses remains in or around the same level, then the workings of the regression will not be seriously affected. I expect that there will be a strong link between falling adoption rates and increasing abortions carried out on Irish women.

X2: The number of births outside marriage

As mentioned previously, in 1967 there were 1502 adoptions and 1548 births outside marriage. Holy Catholic Ireland did not recognise single parents - until 1981 the State officially referred to children born outside of marriage as "illegitimate", and by this stage births outside marriage outnumbered adoptions by 3 to 1. The increased social acceptance of births outside marriage was fought for tirelessly by groups like Cherish, who sought increased social welfare benefits and a legitimate social standing for single mothers. In a way, Ireland had found an alternative to the practice of adoption as more and more single women were rearing their children alone. I expect that this would suggest a reduction in the supply of children for adoption and that there would be a high correlation between the variables.

Estimation

There are various econometric methods that can be used to derive estimates of the parameters of economic and social science relationships from statistics. The Ordinary Least Squares model is a simple but effective method which offers satisfactory results to non-economic models. From the estimates I obtain I will construct a line of best fit based on the following regression model:

$$Yi = ß\ o + ß\ 1X1 + ß\ 2X2 + m\ 1$$

Where;

Y = variation in observed explanatory variable

ß o + ß 1X1 + ß 2X2 = systematic or explained variation

m 1 = random or unexplained variable

This method will yield a relationship between the variables by estimating the size and sign of ß o, ß 1 and ß 2.

The regression

$$Yi = 1558.3 - 0.00733X1 - 0.10897X2$$

Independent Variables	Parameter Estimates	T-statistic [probability]

Constant C	1158.3	25.5114 [.000]
X1	-0.007333	-0.20958 [.836]
X2	-0.10897	-6.6550 [.000]

R^2=0.87896

Correlation Coefficient

The correlation coefficient, R^2, is a measure of the relationship between Y, X1 and X2 and takes on values of between 1 (for perfect linear relationship) and 0 (for a no relationship). The correlation coefficient does not provide any information regarding the direction of causality, but social science theory would support the case that increasing abortions and births outside marriage lead to falling adoption rates, and not the other way around. On first inspection, it looks as if the model has very high explanatory powers. But on further consideration, I regressed X1 onto X2, and obtained an R^2 of 0.72289. There is high significance to this figure, as it says that a substantial amount (but not excessive) of the 0.87926 figure comes from multicollinearity. This suggests that the two X variables are affected by similar factors, and in this case makes perfect social science sense, as both abortions and births outside marriage represent changing social attitudes. To measure the influence of X1 and X2 separately, I regressed Y on X1 and X2 individually. The results show that increasing births outside of marriage have a more significant affect than abortions on adoptions.

Independent variable	Parameter Estimates	T-Statistic
Constant C	1600.1	15.7268
X1	-.20531	-6.6572

R^2=.64870

Independent variable	Parameter Estimate	T-Statistic
Constant C	1551.1	31.4936
X2	-011189	-13.2473

R^2=.87969

T-statistic

The t-statistic measures the ratio of the estimate to the standard error; "an estimate of a parameter is statistically significant if the t-statistic associated with it causes us to reject, at a particular significance level, the hypothesis test". From the multiple regression, it was found that X2 was significant at both the 10% and 5% levels, while X1 was found to be not significant at either level. This suggests that increasing births outside of marriage are more significant in explaining falling adoption rates than the number of abortions.

F-statistic

The F-statistic indicates whether all the variables in the equation together are significant. Knowing that the levels of R^2 and the F-statistic are closely linked, I expected the F statistics to be reasonably large. The actual figure was 84.2716 and is statistically significant to a level of 10% and 5%, but not to 1%. This means that abortion rates and extra-marital births as explanatory variables are jointly significant.

Durbin-Watson

The Durbin-Watson test is a popular and straightforward procedure for testing for serial correlation; it measures if each observation is statistically dependent on the previous terms e.g. if previous prices have been lower than the next year's prices have a higher probability of being low. In the model the Durbin-Watson figure is 1.150 as I have 26 observations and 2 variables the critical values for the model are:

$$dl = 1.224 \text{ and } du=1.553$$

If my D-W statistic was greater than 1.553 then there would be no evidence of serial correlation and if it was in-between the two values then the evidence of it would be inconclusive. But as it is below the critical lower figure then there is definite autocorrelation of the disturbance terms. This is not an unusual occurrence in time-series data but results in two negative consequences: firstly, least squares estimators lose the desirability of being efficient or asymptotically efficient and secondly, conventional expressions of variances of the OLS become biased.

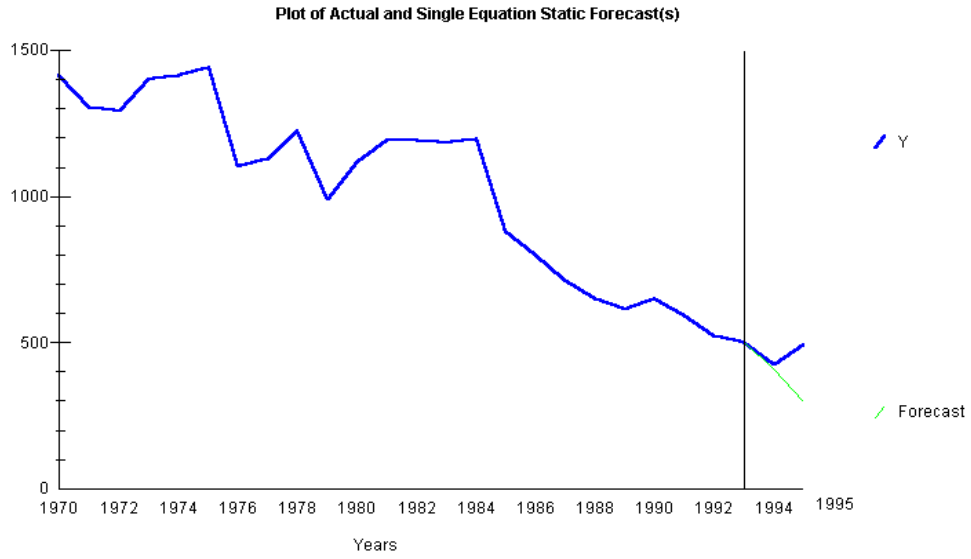
Forecasting power of the model

A desirable quality of any econometrics project is good forecasting capabilies. In this instance I ran the model from 1970 to 1993 and got it to predict the figures for the next two years. In doing so, Microfit gave the following predictions:

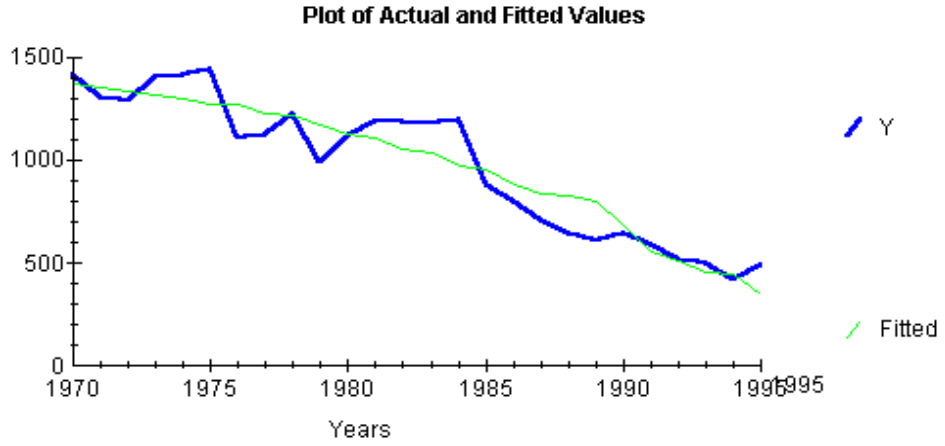
	1994	**1995**
Projected	405	300
Actual	424	490

In 1994 the model predicted quite accurately the number of adoption orders, but it was significantly wrong in 1995. However, it needs to be borne in mind that 1995 was one of the few years when adoption rates actually increased.

Comparison of forecasted and actual values



Evaluation of the model



Koutsoyiannis rates econometric models by several criteria, and in order to estimate the plausibility of my model I will apply this criteria to my model.

· *Theoretical plausibility*: This model fits this criteria as it makes sound social science sense. It is very plausible that changes in the numbers of single mothers and of abortion rates influence adoption rates.

· *Explanatory ability*: To fit this criteria the model should be able to explain the observations of the actual world, and I feel that this project does this, as it is consistent with the social science theory.

· *Forecasting ability*: This model fails here. It predicted that adoption rates would stabilise in 1994 which was correct but it was substantially wrong in 1995.

· *Simplicity*: To fit the final criteria a model should represent the relationships in question with maximum simplicity. By using just two explanatory variables, and also noting that these reflect changing social attitudes, the model remained simple but effective.

Conclusion

Overall, the model generally came up with the results I expected, although on reflection I am not convinced that the X1 and X2 variables account for nearly 90% of the reason that adoption rates have falling so drastically in the last 30 years. When I ran the same regression over the period of 1970–1980, I found a correlation coefficient of just 0.53188. If the model was accurate then the correlation coefficient should have had a higher value over this period. As mentioned by Sachedeu, there are many other significant factors that intuitively account for more than 10% of the reduction in adoption uptake. The Adoption Board itself highlights two significant factors in its most recent annual report. The first is that the Adoption Board is still largely run under a system devised in 1952, and has resulted in shortfalls and inconsistencies in the system which alter its efficiency and only serve to slow up the process. The second fault highlighted in the report is that legislation on adoption in Ireland consists of six pieces of legislation which affect adoption and this has resulted in a lack of continuity and efficiency. Kevin Cooney of the Adopted Peoples Association highlighted the relative increases in the lone parent allowance as a dominant factor in explaining the changes. Another article in the same paper points to the adverse publicity that adoption procedures have got over the last few decades. Finally, the Adoption Board itself points to the fact that parents who adopt from countries like Romania go through less rigorous screening than in Ireland. All of the above factors are under-represented in the model.

There are many influences on the number of adoption orders made each year, and this project made reference to just some of those. Adoption is first and foremost a service for children and any change in policies must consider the welfare of these children as its prime objective.

Bibliography

An Bord Uchtala (1997) *Report of An Bord Uchtala.* The Stationary Office: Dublin.

Bunreacht na hEireann. Government Publications: Dublin.

Cooney, Kevin (1/2/99) in *The Irish Times*.

Kelliher, M.A. (1995) "Diamonds Are Forever" in *The 1995 Student Economic Review.* Colourbooks: Dublin.

Koutsoyiannis, A. (1977) *Theory of Econometrics.* Macmillan Education.

McCashin, A. (1996) *Lone Mothers in Ireland; A local study.* Combat Poverty Agency: Dublin.

Sachedeu, A. (1984) *Adoption and Social Attitudes*.

Trade and Technological Progress in Endogenous Growth Models

Alexis Murphy – Senior Sophister

Solow's Growth Model, which for years dominated thinking on economic growth, is criticised for the exogeneity of growth in the model. This lead to the emergence of endogenous growth models. In this essay Alexis Murphy examines this approach and in particular the role of trade and technological progress in the model.

This paper reviews some of the recent literature that deals with the effect of trade on the 'residual' or technological progress element in endogenous growth models, and uses this to highlight some inherent difficulties in addressing this issue.

The two central issues that are to be discussed in this essay are trade and growth. Both issues are highly topical for a variety of reasons. Growth theory is at the cornerstone of modern macroeconomic analysis. The reason is self evident: we are preoccupied with how our economies can grow in order to guarantee a better standard of living on aggregate for the agents in these economies. Trade theory is viewed as important because it analyses the best means for each country to develop its comparative advantage. Both of these branches of modern economics suggest that economic activity far from being a zero-sum game, can be beneficial to all participants.

An analysis of the effects of trade is furthermore important because of the rapid speed at which the creed of open-economy liberalisation and globalisation is being spread, the growing trend towards regional integration, and the movement towards world economic integration through the World Trade Organisation (WTO). Improvements in IT and transport have also contributed significantly to promoting global integration.

Many developing and transition economies have followed the trend towards liberalisation either voluntarily, in a desire to replicate the successes of economies such as Hong-Kong or Taiwan, or under the compulsion of the IMF and the Structural Adjustment Programs (SAPs) of the World Bank. This is perhaps the clearest example we have to date of the paradigm shift from relatively closed planned economies to free-market open economies.

The role of the IMF and World Bank in encouraging trade liberalisation implicitly imposes a very US style perspective on the political economy of the developing world. The sovereignty and ability of many developing countries to choose for or against trade liberalisation is constrained by their economic weakness relative to the developed world. There may be a short-run bandwagon effect where one developing country follows its neighbour in order not to miss out on the potential upside consequences of economic liberalisation. By discussing the issue of trade and technological progress, it may appear that the ones who have the most to gain from trade liberalisation are the high-tech countries such as the U.S. who have significant comparative advantages in terms of R & D and human capital relative to transition and developing economies.

However, even in the developed world, the gains from trade and integration are far from clear. The benefits of technology spillovers are significant in Ireland, where the country has benefited from Foreign Direct Investment (FDI) by a variety of high-tech multinationals. Is it the case that the current supremacy of Silicon Valley is beneficial to world economic growth because of positive spillovers of new technologies, or is it the case that high R & D in the U.S. and their apparent comparative advantage in new technologies is giving the U.S. a comparative advantage which may be detrimental to resource re-allocation and long-run growth in the rest of the world?

The relationship between the residual of endogenous growth models and trade is important in view of certain recent trends which have affected developed economies in particular. The growing importance of the services industry in developed economies indicates the need to develop models in which growth accounts for more

sophisticated inputs than simply labour and capital. The importance of the services industry and its corollary, human capital, show the way in which the inputs of production are now much more difficult to categorise in the simplistic way of traditional growth models. This, in part, has lead to an in-depth investigation of the 'residual' in growth models.

By 'residual', we understand any factor that affects output, other than labour or capital. The definition is suitably vague as to be able to include anything from Research and Development to climatic conditions. However in the recent literature, the term: 'residual' has been replaced by technology, technological progress, or technical progress. The vagueness of the definition also introduces the theme of my essay which is that the taxonomic difficulties involved in defining the residual (and in parallel, openness, in the trade sense) lead to inherent problems in both the theoretical and empirical material relating to the relationship between trade and endogenous growth. Particularly, the surreptitious replacement of 'residual' which has the connotations of being the 'black box' of economic growth, by 'technological progress' has narrowed some of the scope for research. This is not to say that the existing literature on technological progress and growth should be condemned, but points to the importance of broadening the ambit of the issues under discussion in the field today.

There are two main constraints faced by researchers in this field. From the theoretical perspective, there is a need to present a relatively simple model that isolates the key factors underlying the growth in technology and the manner in which it is dissipated through international trade. Linked to this is the main constraint of empirical work, which involves finding a measurable proxy or proxies of the determinant(s) of technological progress, and similarly measures of openness.

Several theoretical models have been developed to analyse the effects of trade on technology and thereby on long-term economic growth. The three most important contributions build on Romer's short article entitled 'Endogenous Technological Change'. The model focuses on the importance of human capital as the catalyst of R & D, which in turn stimulates the residual of the endogenous growth model. The benefits of R & D are in terms of the new innovations themselves which guarantee monopolistic rents for the entrepreneurs through patenting, and because new innovations add to the stock of non-excludable knowledge, hence raising the productivity or reducing the marginal cost of new innovations. He then suggests that trade would be beneficial to technological innovation, superficially by providing access to new markets, but more fundamentally by integrating the market for human capital. Romer cites the example of US counties that had access to navigable waterways during the 19th century which had higher rates of patenting than more isolated counties.

Grossman and Helpman then wrote a series of articles that developed open economy, general equilibrium frameworks where the effects of trade on technology were investigated. This issue is also discussed in some detail in their book *Innovation and Growth in the Global Economy*. Their main model is a three-good (intermediate goods, final goods, and R & D), two-country economy, with skilled and unskilled labour as the two inputs. The central theme is that even if there is a difference in the relative factor endowments of the two countries (for example, one country may be rich in human capital or skilled labour), trade will have created static gains for both countries. There is a trade-off between the production of final goods and R & D, both of which are human capital intensive. If demand is high for final goods, there may be a re-allocation of resources from R & D to final goods production. This will have the effect of increasing current output at the cost of tomorrow's output. However this increased demand is mitigated by the fact that increased demand for final goods also increases the incentives and rewards of R & D.

Their broader conclusion is that factor price equalisation will eventually ensure that both trading countries enjoy identical growth rates of output and consumption irrespective of their factor endowment. Another conclusion is that "an equiproportionate once-and-for-all increase in the effective labour force accelerates long-run growth" (an increase in the 'effective labour force' means the productivity of labour, through inter alia new technologies and innovation). This is an extension of the truism postulated by Romer that policies aimed at increasing human capital should be unambiguously positive for long-run growth. Problems in an open economy arise when increases in technology in both countries are not at a common rate, or if after an increase in technology in one country the spending shares on final goods change. This last qualification highlights the problem of steady-state analysis as opposed to dynamic analysis.

The limitations of their model may also help to explain the emergence of a technology-gap between developed countries and less developed countries. A static analysis of such a gap in the context of trade was carried out by Young (1991) where he considers economies without knowledge spillovers but where differences in the potential for learning by doing (which is determined by the stock of technology) enable the LDC to outgrow the DC. However in recent history the technology gap seems to have increased rather than decreased.

Grossman and Helpman themselves point to instances in which trade may not be beneficial to growth in the long run. This occurs when the country that is relatively well endowed in technology is bigger in size than its trading partner. They conclude that because knowledge spillovers are imperfect, factors such as national factor endowments will lead to long-run growth differences between countries.

From the empirical perspective, as alluded to above, there are serious problems in terms of measuring both the technology variables in growth and openness. Although the empirical evidence seems to overwhelmingly show that trade is beneficial to growth, it is difficult to identify the exact mechanisms by which trade affects growth. Does convergence occur through capital accumulation, factor price equalisation, knowledge spillovers or trade-mediated technology transfers?

In the case of many East-Asian economies, the evidence seems to suggest that the benefits from their investment in R & D occurred only because they initially operated as relatively closed, import-substituting economies, and then benefited from trade once their strong high-tech industries had been developed.

Coe and Helpman focus on the effects of R & D among trading partners for a variety of developed open economy countries. This empirical study follows on from the theoretical literature of Helpman and Grossman, which focuses on R & D as the primary source of innovation in the economy. The transmission mechanism can occur directly by one partner learning about "new technologies and materials, production processes, or organisational methods" or indirectly by access to imports that facilitate innovation. As a proxy for foreign R & D capital stocks they use imported weighted sums of trade partners' cumulative R & D spending. Their conclusions suggest that trade does affect Total Factor Productivity (TFP) growth positively. Furthermore they identify the presence of large spillover effects of R & D: "about one quarter of the total benefits of R & D investment in a G7 country accrue to its trade partners."

The study led to two recent articles that criticise some of the econometric techniques used by Coe and Helpman. Lichtenberg et al corrects two faults in the Coe and Helpman paper. The first is the ‘aggregation bias' which occurs in the weighting scheme used to calculate foreign R & D stocks. They also correct an ‘indexation bias'. However their corrections corroborate the conclusions presented by Coe and Helpman.

Keller is more critical of Coe and Helpman. He uses a ‘Monte-Carlo' experiment which estimates international R & D spillovers among randomly matched trade partners. He concludes:

> *"Considering the complicated with respect to the data generation process underlying the R & D and TFP series, the results in this paper might in fact seem rather unsurprising. However, it is clear from this analysis that the extent to which R & D spillovers are related to the pattern of international trade must be estimated in a model which allows simultaneously for trade-unrelated international technology diffusion".*

This econometric evidence highlights the difficulties that arise from trying to analyse the relationship between trade and technology growth. Long-term economic and political histories suggest that openness to trade and foreign influences foster new ideas and innovation which are ultimately beneficial to mankind. The deliberate policies of Ming China to shut itself off from the outward world seem to explain the failure of that country to develop in subsequent centuries. Similarly trade and travel in Europe from the 15th century onwards seems to explain the manner in which a variety of new ideas, innovations, and technologies helped to turn Europe into the dominant world power in subsequent centuries.

However is it important to reconcile such qualitative facts with the more quantitative economic analysis of today. The theoretical research in the field is obliged to make grossly simplifying assumptions. Similarly the empirical literature has problems both in using the correct proxies for the ‘residual' and in terms of identifying transmission mechanisms through which such proxies affect output.

R & D is a convenient proxy for the resources being put into innovations, yet it fails to account for many innovations. The operating system DOS was created with very little R & D costs, but had massive consequences on the world of PC's. Similarly, Viagra was discovered by mistake, rather than as the result of a conscious investment decision. There are many random elements that influence the creation of ideas and therefore the residual in endogenous growth models. However it also seems clear that certain parameters both on a national and international level are conducive to encouraging this form of growth. Investment in human capital is highlighted by Romer. If Grossman and Helpman are partially correct in their approach, international patenting laws should be enforced in order to create the monopoly rents that encourage R & D which may only pay the individual entrepreneur through exploitation of such rents.

Institutional factors such as the enforcement of property rights, the efficiency of legal and fiscal systems, and a variety of other social and political practices are the key to creating the background against which innovations can occur. The stagnation of an economy such as Russia can largely be attributed to the failure of such systems and practices.

This would point to an interesting field of research that would be focused on the effect of trade on such practices. It is illegal for U.S. companies to pay bribes or kickbacks in foreign countries, whereas there are no such legal restrictions for European firms. Perhaps trade could be seen as a means of propagating better standards of transparency, honesty, and fairness. The implicit adoption of such practices would then create the necessary parameter for strong growth in TFP. This would present an alternative picture to that of the foreign firm or multinational exploiting a weaker trading partner.

This is one proposed approach that would be compatible and complementary with some of the current research reviewed above. It is an approach that may provide a certain methodological incommensurability with the existing approach, yet it may also provide a richer understanding of the issue at stake.

Bibliography:

Aghion, P. and P. Howitt (1990) "Model of Growth Through Creative Destruction" in *NBER Working Paper* 3223. Cambridge, MA.

Aghion, P. and P. Howitt (1998) *Endogenous Growth Theory*. MIT: Cambridge, Mass.

Becker, G. (1964) *Human Capital*. Columbia University Press: New York.

Borensztein, E., J. De Gregorio, & J.W. Lee, (1998) "How Does Foreign Direct Investment Affect Economic Growth?" in *Journal of International Economics*, 45, pp. 115-135.

Coe, D. & E. Helpman (1995) "International R & D spillovers" in *European Economic Review* 39, pp. 859-887.

Greenaway, D., W. Morgan, & P. Wright (1998) "Trade Reform, Adjustment and Growth: What does the evidence tell us?" in *Economic Journal* 108, pp. 1547-1561.

Grossman, G. & E. Helpman (1990) "Comparative Advantage and Long-Run Growth" in *The American Economic Review* 80 (4), pp. 796-815.

Grossman, G. & E. Helpman (1991a) ‘Trade, Knowledge Spillovers, and Growth' in *European Economic Review* 35, pp. 517-526.

Grossman, G. & E. Helpman (1991b) *Innovation and Growth in the Global Economy*. MIT: Cambridge, MA.

Grossman, G. &E. Helpman (1994) ‘Endogenous innovation in the Theory of Growth in *Journal of Economic Perspectives*. Winter, 8 (1), pp. 23-44.

Jones, Charles (1998) *Introduction to Economic Growth*. W. W. Norton: New York

Keller, Wolfgang (1998) "Are International R & D Spillovers Trade-Related? Analyzing Spillovers Among Randomly Matched Trade Partners" in *European Economic Review* 42, pp.1469-1481.

Kennedy, Paul (1988) *The Rise and Fall of the Great Powers*. Unwin Hyman: London.

Lichtenberg, F. R., & B. van Pottelsberghe de la Potterie (1998) "International R & D spillovers: A comment" in *European Economic Review* 42, pp. 1483-1491.

Ocampo, J. & L. Taylor (1998) "Trade Liberalisation in developing economies modest benefits but problems with productivity growth, macro prices, and income distribution" in *The Economic Journal*, 108 (September), pp. 1523-1546.

Romer, David (1996) *Advanced Macroeconomics*. McGraw and Hill: New York.

Romer, Paul (1990) "Endogenous Technological Change" in *Journal of Political Economy* Oct. 98 S71-S102.

Romer, Paul (1994) "The Origins of Endogenous Growth" in *Journal of Economic Perspectives*. 8 (1), pp. 3-22.

Solow, Robert (1957) 'Technical Change and the Aggregate Production Function' in *Review of Economics and Statistics* 39 (August) pp. 312-320.

Weitzman, Martin (1996) 'Hybridizing Growth Theory' in *The American Economic Review* 86 (2) pp. 207-212, May.

Predatory Pricing: A New Theory

Lucy O'Hagan – Senior Sophister

Regulating predatory pricing and containing its adverse effects on competition involves a delicate blend of economics and law. Lucy O'Hagan analyses a new economic theory of predatory pricing and concludes that anti-trust law could be made more applicable and effective through the theory's application.

Introduction

The issue of predatory pricing is a complex one with a chequered history. Although it has had legal recognition for over a century, it was not until McGee's work in 1958 that it was subjected to economic analysis. His conclusion was that predation would rarely be profitable and consequently would be unlikely to occur. Although his results ran counter to standard intuition, they held sway as late as 1980 since no other theory emerged to refute it. Predatory pricing is a strategic action of temporarily reducing prices in order to increase long-run profit. There is no one unambiguous definition of predation stating how low prices must fall, how rivals will suffer etc. Consequently its identification has been fraught with difficulty as the presence of numerous legal rules suggests. Since the 1980s, however, economic analysis of the subject has taken a new approach yielding models of predation as a profitable and likely strategy for firms. Using this analysis, clearer definitions of predation should be possible making it easier to identify. Drawing on this, the antitrust laws, which developed contrary to McGee's results, could be made more relevant and effective. After giving some insight into antitrust law to date, I will focus on one branch of the new theory and outline the implications arising from it for present antitrust law.

Development of Antitrust Law

Within the last forty years, economic theory and antitrust law on predatory pricing have evolved largely independently of each other. When Areeda and Turner (1975) introduced their cost-based test to determine if pricing is predatory, no theoretical model of predatory pricing existed. At that time it was in fact "discounted as an economic impossibility". Despite the theory, antitrust law recognised the existence of predatory behaviour, and the arrival of the Areeda-Turner rule, it was believed, brought the needed coherence to the legal analysis of predation which has existed for three-quarters of a century. Attracted by its apparent simplicity, American circuit courts of appeals embraced the rule, and up to the present day this rule and variations of it are still in use. Briefly, the basis for the rule is that a rational firm will not have below-cost prices, unless it is engaging in strategic, predatory behaviour. The rule is, therefore, that any price less than short-run marginal cost (SMC) is predatory and hence illegal. Since difficulties arise in the measurement of SMC, average variable cost (AVC) is used as a proxy. This rule is connected to the theory of perfectly competitive behaviour, where, in equilibrium, Price = SMC. A number of other cost-based tests have since been formulated, some of which allow more for the dynamic nature of predation, unlike the Areeda-Turner rule which focuses on static, or short-run, analysis only.

The motivation for antitrust law is to "promote full and fair competition and to reap the benefits that competition brings with it". The latter half of this statement is particularly important – by reaping the benefits, the welfare of individuals in society will be increased. Increasing welfare in society is a key government objective, and intervention is justified on the grounds of it doing so. Speaking of antitrust law on predation, Joskow and Klevorick note, "a major obstacle to a smooth transition from objective to operational policy is the problematic nature of the ‘offence' with which we are concerned". In particular, predatory and competitive price cuts can be difficult to distinguish since SMC is hard to observe. It is crucial that a legal rule inhibits predatory price cuts only and not competitive, welfare enhancing ones also. Extending the analysis to imperfectly competitive markets, it may be revealed that predatory price cuts do not unambiguously reduce welfare. In this instance, a legal rule inhibiting all predation could violate the very objective of government intervention.

Ideally antitrust law would have small probability of error and a low cost of implementation. Given the nature of predation, the simple tests, although cost effective, are those most likely to be erroneous. Antitrust law faces a trade-off between implementation cost and accuracy of tests. The Joskow and Klevorick rule

(1979) is based on a more detailed two-tier approach which aims to minimise the sum of implementation costs and the costs of errors. In the first tier, looking at market characteristics filters out those firms likely to engage in successful and rational predation. In the second tier, these firms are subjected to further scrutiny in the form of a cost-based test (explicitly, P < Average Total Cost). They also deem short-lived price cuts, which may be above ATC, to be predatory.

At present, although the US courts still rely on simple cost-based tests, they require evidence of the possibility for recoupment after predation, and in some cases of intent, also. The extra conditions have created a great level of ambiguity between the courts and the implementation costs have risen. Consequently, fewer and fewer cases of predation have been proven legally, ironically just as the concept has been modelled as an economic possibility. Zerbe and Mumford are critical of this trend and maintain that "perhaps predation should not exist legally, but if so this conclusion should not be derived from incorrect premises". The most recent trend within the EU is a focus on selective predatory price-cutting by dominant firms. There is no unanimity with regard to how low prices must be cut to be illegal, however. Andrews notes that, despite the ruling in the recent *Irish Sugar* case, ordinarily only those below ATC will be illegal, but in some cases those below ATC but above AVC will not.

New Theories of Predatory Pricing: Signalling Models

Since the 1980s, economic theory on predatory pricing has advanced in a new direction. Using game-theoretic analyses of imperfectly competitive behaviour, models have been formulated of predatory pricing as a rational equilibrium strategy for firms. By dropping the assumption of symmetric information, predatory pricing has been modelled as an economic possibility. The models that have been developed fall into three main categories – 'Long-Purse' or 'Deep-Pockets' models, reputation models and signalling models. All of these feature informational asymmetries. In this paper I am focusing on signalling models. In these models the 'predator' has an informational advantage over its 'prey' with regard to some parameter, usually cost or demand, which influences the profits of the prey should it continue to produce. Using its price, the predator signals to the prey about this parameter which the prey cannot directly observe. In these models, the two firms are already in the market. Consequently the motive for predation is to induce exit rather than to deter entry.

To clarify the intuition of these models I will take the example of a market with two firms where firm 1's costs are private information, and can take on only two values, high or low. Quantity is the strategic variable. The profits of firm 2 depend on firm 1's costs – the lower these costs are relative to his or her own, the less profitable it will be for firm 2 to continue producing. I assume that firm 2 will exit if firm 1 is a low-cost firm. Low prices signal low costs and high prices signal high costs. By expanding its output and lowering its price firm 1 can signal to firm 2 that it is a low-cost firm, and hence induce it to exit. Once firm 2 has exited, firm 1 has monopoly power in that market. This reduced price needs bear no direct relation to the predator's costs. The price must only be low enough to make firm 2 believe it is unprofitable for it to produce. Where firm 1 has any cost advantage over firm 2, this reduced price is likely to be above firm 1's cost. Predation involves an increase in long-run profit for the predator at the expense of reduced short-run profit. The incentive to signal to the rival will depend on this trade-off which in turn depends on the size of the price cut, and on the actual cost structure of firm 1. In some cases both low- and high-cost types of firm 1 will find it optimal to expand output by the same amount in the short run. This is known as a pooling equilibrium. In this case firm 2 cannot determine whether firm 1 is actually a high- or a low-cost type after the signal has been sent. Alternatively, the optimal short-run strategies of the two firm types may differ in which case there will be a separating equilibrium. In this case the high-cost firm can do better by revealing its type than by mimicking the low-cost firm. Consequently only the low-cost type is prepared to expand output to credibly signal its type. The correct signal is sent and complete information emerges.

Since the two firms are already in the market, signalling models have an added complexity which enriches the final result. With firm 2 in the market the predator's output, (be it a high- or a low-cost predator), depends on what firm 2 is already producing as well as on demand and its own cost structure. But firm 2's output depends on what firm 1 produces, in accordance with its best response function. Unable to directly observe firm 1's type at the outset, firm 2 attaches probabilities to it being low and high cost types. In the case of a separating equilibrium in the first period, firm 2 will base its output decision on the expected output of firm 1, which it derives using these probabilities, since firm 1's actual cost, and hence output, are unknown. Firm 2's output is a decreasing function of both types of firm 1's output. We already know that in a separating

equilibrium the low-cost firm 1 will send a signal and produce more than it otherwise would, since it is profitable for it to send a credible signal. The possibility of firm 1 being a low-cost firm raises firm 2's evaluation of expected firm 1 output. This means that firm 2's output will be reduced. But since firm 2's output is lower a high-cost firm 1 will expand its output, even though it is not signalling. This result, originally derived by Mailath, implies that in signalling models the short-run equilibrium has the feature that both types of firm 1 produce more than in the case of symmetric information and firm 2 produces less. The very possibility of firm 1 being a low-cost firm causes firm 2 to reduce its output. Consequently in this situation with two incumbents in the market and asymmetric information the predator has not just one but two motives for predation - to induce exit (as already mentioned), and also to force its rival to reduce its output when it remains in the market.

Implications for Antitrust Law

To date neither the signalling models nor any other of the recently developed theories of predatory pricing have been embraced by antitrust law. Klevorick has lamented that "the lack of impact that the recent equilibrium models of predation have had on the development of antitrust law concerning predatory pricing is unfortunate". In particular, the possibility of asymmetric information appears to have been completely overlooked. As mentioned, a major difficulty for antitrust law is distinguishing predatory from competitive price cuts. In view of this, the courts have favoured cost-based tests for identifying predatory price cuts. (Above-cost price cuts are usually viewed as competitive rather than predatory.) One of the strongest implications to emerge from the recent models, however, is that successful predation does not require prices to fail the Areeda-Turner, or any cost-based test. The new models suggest that, contrary to the arguments of Mastromanolis, identification of above-cost predation is correct, and such test standards should be applied. Given this, it is other factors, such as the relevant market or information structure, that must distinguish predatory from competitive price cuts. As somewhat of an exception, the *Irish Sugar* decision by the European Commission in 1997 was against selective, although not below-cost, predation. This suggests that EU law may, albeit independently of these models, be developing in the right direction.

A further implication is that predation will not necessarily reduce welfare. In separating equilibria, complete information emerges and the rival can make its decision without bias, thus enabling the market to function more efficiently – the rival will only remain if it is cost-effective and profitable to do so. For instance, if demand is truly low, it may only be efficient for one firm to supply the market. Again, contrary to Mastromanolis' arguments, any simple rule applied indiscriminately will be erroneous therefore, by preventing *all* signalling, and thus protecting some inefficient firms. Depending on the cost of these errors, the efficiency gain of eliminating welfare-reducing predation may not be sufficient to warrant antitrust law on predation. Indeed, Milgrom and Roberts note that "it may be best simply to give up on attempts to control predation, even if one believes that it can and does occur".

Ordover and Saloner believe that, despite the possibility of error, simpler, more explicit tests of predation are still preferable, should courts continue to control predation. Clearly the currently ambiguous definitions of predation in both the EU and the US courts could be clarified with the aid of the new models, enabling less erroneous and yet more explicit tests. Saloner suggests improving upon the Joskow and Klevorick rule by introducing a third tier that would examine the information structure of the industry. In this way predation which increases welfare may be distinguished from that which reduces welfare and ‘good' signalling will not be inhibited. From the discussion earlier, simpler, unambiguous tests will be implemented more easily by the courts. The focus now must be on using the new theory to construct usable tests which identify and inhibit welfare-reducing predatory price cuts only. Drawing on signalling models, Scharfstein has made an attempt at this – he models the correct incentive structure for firms, via the governments strategy of search, investigation and fine, to ensure that firms give only correct signals, without discouraging them from engaging in competitive behaviour.

Conclusion

The so-called ‘new' theories of predatory pricing that have developed over the last fifteen to twenty years have reopened the debate on predation. By looking at the signalling models alone several implications for antitrust law emerge. Essentially they serve to highlight necessary changes for antitrust practice in the area, which arguably has lacked a firm economic foundation to date. Cost-based tests may be too limiting and can no longer be relied upon to distinguish between predatory and competitive price-cutting. Furthermore,

predation may not always violate government welfare objectives. Since these models do not refute the complexity of predation, they may confirm one argument that it is not cost-effective to control predation. More optimistically, however, they may help to create a less ambiguous definition (and possibly more than one) of predation from which the courts could derive a more effective control of the practice. In particular they provide guidance on more accurate identification of predatory behaviour, and where it is identified, determining its implications for the welfare of individuals in society, and thus whether or not it should be prohibited.

Bibliography

Andrews, P. (1998) "Is Meeting Competition a Defence to Predatory Pricing? - The Irish Sugar Decision Suggests a New Approach" in *The European Competition Law Review* 1, pp. 49-57.

Areeda, P.E. & D.F. Turner (1975) "Predatory Pricing and Related Practices Under Section 2 of the Sherman Act" in *Harvard Law Review* 88, pp. 697-733.

Farrell, J. & G. Saloner (1986) "Installed Base and Compatibility: Innovation, Product Pre-announcements, and Predation" in *American Economic Review* 76, pp. 940-955.

Joskow, P.L. & A.K. Klevorick (1979) "A Framework for Analysing Predatory Pricing Policy" in *Yale Law Journal* 89, pp. 213-270.

Klevorick, A.K. (1993) "The Current State of the Law and Economics of Predatory Pricing" in *Antitrust and Industrial Organisation* 83(2), pp. 162-167.

Mailath, G. (1984) *The Welfare Implications of Differential Information in a Dynamic Duopoly Model*, Princeton University.

Mastromanolis, E.P. (1998) "Predatory Pricing Strategies in the European Union: A Case for Legal Reform" in *The European Competition Law Review* 4, pp. 211-225.

McGee, J. (1958) "Predatory Price Cutting: The Standard Oil (N.J.) Case" in *Journal of Law and Economics* 1, pp. 137-169.

Milgrom, P. & J. Roberts, (1982) "Limit Pricing and Entry under Incomplete Information: an Equilibrium Analysis" in *Econometrica* 50, pp. 443-459.

Ordover, J., & G. Saloner (1989) "Predation, Monopolization and Antitrust" in Schmalensee R. and R.D. Willig (eds.) in *The Handbook of Industrial Organisation*.

Roberts, J. (1986) "A Signaling Model of Predatory Pricing" in *Oxford Economic Papers* (Supplement) N.S. 38, pp. 75-93.

Saloner, G. (1987) "Predation, Mergers and Incomplete Information" in *Rand Journal of Economics* 18, pp. 165-186.

Salop, S. & C. Shapiro (1980) "A Guide to Test Market Predation", Mimeo.

Scharfstein, D. (1984) "A Policy to Prevent Rational Test-Marketing Predation" in *Rand Journal of Economics* 15, pp. 229-243.

Tirole, J. (1988) *The Theory of Industrial Organisation*. MIT Press.

Zerbe, R. Jr. & M.T. Mumford, (1996) "Does Predatory Pricing Exist? Economic Theory and the Courts after Brooke Group" in *The Antitrust Bulletin* Winter, pp. 949-985.

Rational Expectations: An Econometric Investigation

Paul Scanlon – Junior Sophister

Paul Scanlon employs an econometric approach to empirically test the usefulness of rational expectations in consumption theory. This idea is central to the new classical school's approach and it is concluded that the theory has got a significance for real world policy decisions.

"*…Mr Lucas… exorcised the dim-witted actor from macroeconomics*".

The Economist, 30th March 1996.

Introduction

In 1995 Robert Lucas won the Nobel Prize in Economics for his seminal work on the rational expectations hypothesis. Described by *The Economist* as "the most influential macroeconomist of his generation", Lucas's theories have doubtless undermined traditional Keynesian economics and paved the way for 'new classical economics'. Although Keynes was conscious of the significance of the elusive and intangible 'expectations' concept (what he called 'animal spirits'), he never explicitly incorporated expectations into his models. Although the concept was again propounded by Muth in the seventies, it was Lucas who, through rigorous mathematics, finally incorporated the rational expectations hypothesis into a quantitative and tractable form. Today the hypothesis has assuredly become the *sine quo non* of macroeconomics.

In this paper I attempt to model changes in real household consumption. I believe that consumption, which comprises most of GNP, lies at the heart of any economic system. If consumer consumption begins to falter, then this will have perilous consequences for the entire economy, and perhaps others too. Such marks the onslaught of the conventional 'slowdown' or recession. A sharp decline may well cause the entire economy to founder. Soon the economy is in the doldrums. However, I further contend that at the heart of the consumption debate, lies the aforementioned concept of 'rational expectations' and consumer sentiment. It is arguable, for instance, that the persistent moribund state of Japan's economy and the government's continued failure to stimulate it is entirely attributable to consumer pessimism and expectations of further decline. Conversely, and on more local scale, Ireland's continued consumer confidence is surely partly attributable to expectations of further prosperity. Success breeds success. It should be clear that the concept of the self-fulfilling prophecy is, in many ways, pivotal to all of this.

In this paper I attempt to both qualify and quantify some of the above assertions. I model the increase in real household consumption on three regressors, the increase in employment, the government financial balances and short-run interest rates. Although the model does not explicitly embrace income, we shall see that it *implicitly* does. The data is cross-sectional and is from seventeen OECD countries in 1997. Throughout my analysis the role of 'rational expectations' is emphasised. Although the model lacks the mathematical sophistication of many existing such models, I maintain it indeed has considerable explanatory power and possesses an intuitive simplicity.

It is also my intention to give a brief analysis of the application of some of these concepts to the case of Ireland over the past fifteen years or so. It has been postulated that much of the above has been highly instrumental to the Irish recovery

in the late eighties. Thus, I maintain my analysis has broad applicability, and is highly applicable to Ireland on a local level. Ultimately, then, I hope to explain what I believe, was one of the underlying reasons for our recovery, and hence phenomenal growth today.

The Econometric Model

My multiple regression model is as follows:

$$\%D\ CONSUM = b_0 + b_1 (\%D\ EMPLOY) + b_2 (GOVBAL) + b_3 (SRINTRATE) + e$$

where: e refers to the *stochastic disturbance term*.

CONSUM refers to *real private consumption expenditure*.

EMPLOY refers to *employment.*

GOVBAL refers to *general government financial balances.*

SRINTRATE refers to *short-term interest rates.*

In my analysis I used the latest available data from the OECD *998*. Thus, I deal with 1997 data throughout. To estimate the foregoing model I invoke the method of ordinary least squares (OLS) and apply it to seventeen OECD countries. Most of the countries I omit, I believe are not representative of the conventional case. I have excluded Hungary and the Czech Republic, for instance, due to the current state of transition they are in, and I feel such "anomalies" would not be amenable to my analysis.

The analysis yields the estimated multiple regression equation:

$$\%D\ CONSUM = .344 + .805 (\%D\ EMPLOY) + .517 (GOVBAL) + .431 (SRINTRATE)$$

prob =	(.629)	(.000)	(.006)	(.006)
t =	.49	5.38	3.30	3.28

$F(3, 13) = .000$, $R^2 = .898$, R^2 (adj.) = .875

Further regressions on the individual variables yielded the following:

$$\%D\ CONSUM = .971 + 1.2 (\%D\ EMPLOY)$$

prob =	(.051)	(.000)

$F(1, 15) = .000$, $R^2 = .66$, R^2(adj.) = .64

$$\%D\ CONSUM = 4.107 + 1.086 (GOVBAL)$$

prob =	(.000)	(.001)

$F(1, 15) = .001$, $R^2 = .52$, R^2 (adj.) = .48

%D CONSUM = - .973 + .867 (SRINTRATE)

prob = (.429) (.005)

$F(1, 15) = .005$, $R^2 = .42$, R^2 (adj.) = .39

Some General Remarks

Although I will discuss each of the coefficients in turn, let me first give a cursory general analysis of overall results. Each of the coefficients is significant at the 1% level and thus is highly significant. The F-statistic is similarly highly significant, indicating that the model indeed has explanatory power and that the hypothesis that all the coefficients are zero can be readily rejected. The coefficient of (multiple) determination is high at approx. 90%, but the adjusted coefficient of (multiple) determination gives a more realistic figure of 88%. By any standards these figures are particularly high and indicate that approx. Movements in the regressors can explain 88% of the increase in real private consumption figure. Also, the Akaike Information Criterion decreased with the addition of each variable, indicating they all contribute explanatory power. The Durbin-Watson statistic is not applicable since we are dealing with cross-sectional, as opposed to time-series data. I also note the absence of any serious multicollinearity in the model. All of the regressors are highly significant and the standard errors are relatively small. Furthermore, all of the regression coefficients have the predicted signs (to be discussed).

An analysis of the error terms is fundamental to any regression analysis, since any violation will invalidate our significance tests. It was clear from the histogram of residuals that they approximate the normal distribution. It was evident from the error band that the error variances are approximately equal, indicating homoscedasticity. Also, the standard errors are approximately zero and all lie within 1.5 standard errors of their mean. Hence, I may conclude that $e_i \sim$ iid $N(0, s^2)$. All augurs well for the application of the Gauss-Markov Theorem; we may infer our tests of significance are applicable and that our estimators are BLUE (Best Linear Unbiased Estimator). The standard error of regression, indicating the standard deviation of the residuals, and another measure of goodness of fit, is relatively small, signifying good fit. The error analysis also bodes well for model specification.

I tentatively note, however, the possibility of a simultaneity bias in the model. It is clear that an increase in employment should cause an increase in consumption. However, that causation could conceivably go the other way. Herein lies the potential for simultaneity. This would cause our regressors to be correlated with the error term violating one of our classical linear regression assumptions (orthogonality) and thereby leading to bias and inconsistency under OLS estimation. In this analysis I deal exclusively with the one-way causation depicted above and content myself that the bias fails to adversely affect model results (or if it does so, the bias is not so serious as to invalidate my model). Given that the sample size is relatively small I contend this is a reasonable assumption.

The correlation matrix illustrates correlations of 81%, 72% and 65% between each of EMPLOY, GOVBAL, SRINTRATE and CONSUM respectively. These are indicative of high linear correlations among the variables in question. Given that none of the regressors are more highly correlated with each other than with that with CONSUM, we can conclude again that multicollinearity would not appear to be a problem. I contend that the specification of the model is accurate. I argue this more thoroughly later, but I believe all relevant variables are encompassed in the model and furthermore that no variable that is included is superfluous.

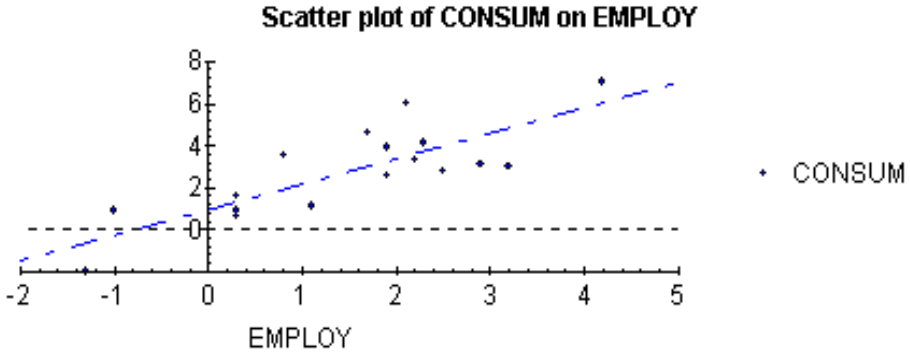
Omitting observations from my analysis continues to yield healthy results. Indeed, omitting the first two countries (USA, UK) yields results that are remarkable. The model in this case yields a coefficient of determination of 93%. Furthermore, an analysis from countries 10 - 17 yields an adjusted coefficient of determination of 99%. Finally, the Chow Test for parameter stability was administered using two sample sets, countries 1 to 9 and countries 10 -17. The result is not significant and provides evidence in favour of the two sets of regression coefficients being equivalent (and hence parameter stability).

An Analysis of Individual Regressors.

EMPLOY *(or %increase in employment)*

The coefficient of EMPLOY is in this case an elasticity. This variable was found to be highly significant (in fact the most significant regressor) both in the model itself and on an individual regression with CONSUM where it yielded an R^2 of 0.66. The scatterplot illustrates an obvious positive linear relationship.

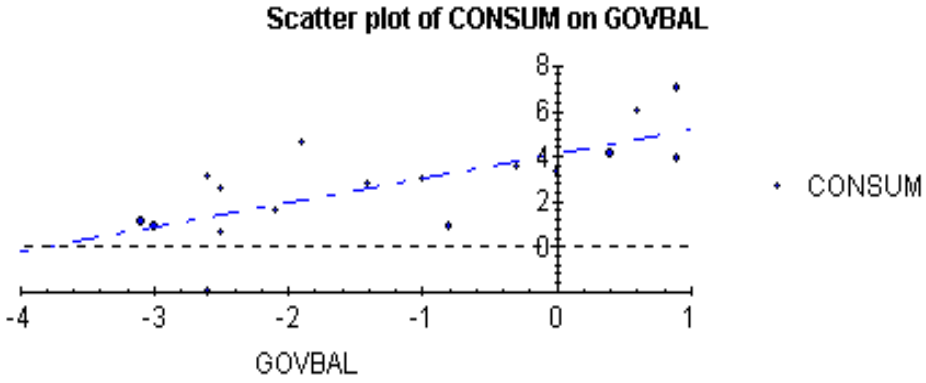
It is intuitively appealing that an increase in employment will through, a better endowed consumer, increase consumption. This is indeed verified in my analysis. Also, an increase in employment should, through the corresponding increased demand for labour, precipitate a growth in labour compensation. This is particularly true in the case of a tight labour market. Given dormant or creeping inflation, the real wage will rise. So we could reasonably conclude that an increase in this figure should ultimately be associated with an increase in real disposable incomes. For this reason I suggest this figure is an ample proxy for income movements and indeed gives a better indication of future consumption. This assertion was borne out by my analysis. The increase in employment and increase in real national income are highly correlated and the relationship is statistically significant. Furthermore, it was found that the EMPLOY regressor had greater explanatory power than that of the latter, when it was replaced my real national income. The inclusion of both variables introduces serious multicollinearity that would undermine results.



It is perhaps interesting that EMPLOY has greater explanatory power. I invoke the rational expectations hypothesis to elucidate my claim. As employment increases the rational consumer will discern a prosperous economy on a growth trajectory. He will foresee less of a tax burden in the future as the onerous social security burden is relaxed and the tax base widened. The result is a wealth effect and hence enhanced consumer sentiment, inducing the consumer to spend more today, as "permanent income" (in the Milton Friedman sense) increases, shifting the IS curve to the right. One could also perhaps suggest that with increased employment rates, the rational consumer would foresee inflation and hence prompting him to purchase at relatively cheaper levels today. Of course the converse of these arguments applies for a fall in employment.

GOVBAL *(or general government financial balances)*

Interestingly, a highly significant positive relationship was evident in my analysis between the increase in real household expenditure and the state of the government finances. The greater the deficit, the less the consumer expenditure and *vice versa.*



This is a powerful argument for the rational expectations hypothesis and the Ricardian Equivalence Theorem (or Ricardo-Barro effect). The poorer the state of the government balances, the greater the future tax burden. Hence the rational consumer will moderate his consumption behaviour and increase precautionary savings; he will save to smooth out permanent income and offset the greater future tax liability. Barro has argued that the actual financing of the government deficit (either through government bonds or taxes) is irrelevant. The perspicacious consumer with reasonable foresight will easily discern that a bond financed deficit will eventually result in the imposition of greater taxes. Hence poor governmental finances under rational expectations should always reduce present consumption. The proposition that consumers are risk averse corroborates much of this argument. Similarly, a healthy government balance is indicative of auspicious economic circumstances and invariably sends positive signals to consumers, inducing them to save less and spend more. Thus, healthy government finances may engender a kind of virtuous cycle, where consumers continually find it rational to increase expenditure. The argument can, of course, go the other way. This kind analysis underlies much of the discussion of Ireland's recent transition from stagnation to prosperity.

Some of the arguments propounded in this domain are most interesting. Some (e.g. Giavazzi & Pagano) argue that increased taxes today, when followed by reduced government spending, actually increase consumption in the case of risk averse consumers since it reduces future uncertainty and increases future income. Barro has argued that in the case of infinite time horizons and taxes to be imposed on the next generation, the altruistic consumer will still increase saving, so that he can compensate the next generation, through greater bequests, so as the tax burden, when it indeed falls due, will not be unduly burdensome (the intergenerational altruism model).

SRINTRATE *(or short-run interest rates)*

A highly significant *positive* relationship between the increase in consumption and short-term interest rates within the model itself and on an individual basis with CONSUM is the most surprising result of my analysis. At first the relationship strikes one as perplexing and at variance with conventional economic theory. However, a finer analysis reveals more subtle results. One possible argument entails an invocation of Irving Fisher's model of intertemporal choice for the case of a saver. Fisher depicted two time periods, a budget constraint (indicating the cost of consumption today relative to consumption tomorrow in terms of the interest rate) and proceeds with an indifference curve analysis. It is arguable that an increase in the rate of interest causes the income effect of the rate rise to outweigh the substitution effect in the present period (i.e. we get the somewhat counterintuitive result that present consumption will *increase* when the interest rate *rises*). However,

for this to occur we would have to have high saving rates and low borrowing rates among the countries in my analysis. Perhaps Japan's extremely low interest rates are having this detrimental effect on consumption in a country with such high savings rates. On this vein, note Japan's high leverage on the accompanying scatterplot.

The above explanation would appear to be consistent with my empirical evidence from the OECD. Higher interest rates would appear to be engendering 'wealth effects' among consumers, spurring a rise in consumption. However, other reasons also support my evidence. In the case of an overheating economy (high consumption) monetary authorities will strive to keep the economy in check with higher interest rates. This will dampen consumer demand and precipitate an exchange rate appreciation, thus curbing inflation. Thus, in this case, higher interest rates will again accompany high consumption (but not imply *causation*). One could argue, however, that high interest rates surely engender inflationary expectations, prompting consumers to spend now rather than later (and *thereby* implying causation). Conversely, low interest rates engender deflationary expectations prompting consumers to save and purchase at cheaper price levels in the future. Again note the case of Japan.

Also, one could argue that low interest rates are a cause for concern for the rational consumer. The circumspect consumer will soon become 'suspicious' if rates plunge too low for he will fear impending recession. This could be indeed what is happening in Japan, as consumers fear continued economic stagnation and are thus reluctant to spend. Similarly, it was evident last year that Alan Greenspan feared letting interest rates fall too much, in case he would rouse consumers` anxieties. Conversely, high interest rates (among the countries in my analysis, anyhow) are often a sign that the economy is overheating and, by implication, is doing well. Thus high rates may send a positive signal to consumers enticing them, perversely, to spend *more* (rather than *less*). Under rational expectations, fiscal and monetary policies can be wholly impotent.

Conclusion

In this paper I have endeavoured to ascertain the primary determinants of consumption in certain OECD countries. In all cases my analysis yielded statistically significant results. As should be clear, throughout the paper I have emphasised the "new classical economics" approach, the primary tenets being rational expectations, perfect capital markets and intertemporal choice. The relevance, power and usefulness of this approach to economic thinking should be apparent. It is salutary to bear in mind that, although we are dealing in the main with inherently psychological concepts, they be reasonably quantified with proxy variables such as the state of the government finances. I also discussed briefly the applicability of the approach to ascertaining the elusive roots of our present and continued economic prosperity. The evidence leads to an espousal of the "expansionary fiscal contraction" hypothesis postulated by McAleese in the early nineties.

Although the rational expectations hypothesis has been attacked on the grounds that consumers do not always exhibit perfect foresight, the hypothesis claims that consumers are not systematically wrong and persistently deluded. We should content ourselves with the latter. Policymakers should also bear this in mind. Reckless, profligate government policies may shatter a governments credibility and suppress consumer confidence as opposed to stimulate it. Governments should incorporate such expectations into policy and appreciate the concept of the "rational consumer"; in this sense consumers should no longer be beguiled by expansionary policies before an election.

It is my hope that I have imparted some insight into this exciting new area that has revolutionised macroeconomic thought over the past two decades or so. Like many theories in economics it has the virtue of being both compelling and tremendously effective. It was interesting to note *The Economist*'s reaction to Lucas` Nobel Prize:

"*As this week's award of the Nobel Prize in economics shows, simple ideas are often the most powerful*".

Bibliography

Barro, **Robert** (1996) *Getting It Right.* MIT Press: Cambridge M.A.

Blanchard, Oliver (1997) *Macroeconomics*. Prentice Hall: London.

Farah and Chakraborty (1996) *International Economic Journal* 10 (3).

Gray, Alan (1997) *International Perspectives on the Irish Economy.* Indecon Economic Consultants: Dublin.

Kennedy, Peter (1998) *A Guide to Econometrics* (4thed.). Blackwell: Oxford.

Leddin and Walsh (1997) *Economic Stabilisation, Recovery and Growth: Ireland 1979-1996.* University College Dublin, Department of Economics: Dublin.

Mankiw, N. Gregory (1994) *Macroeconomics*. 2nd ed Worth: New York.

McAleese, Dermott (1997) *Economics for Business*. Prentice Hall: London.

OECD (1998) *Economic Outlook* December 1998.

The Economist (14/10/95) "Great Expectations and Rational too."

The Economist (21/11/98) "Japan's leaky pump."

Balancing Industrial and Competition Policies

Martina Lawless - Junior Sophister

There are many instances of policy conflicts in economics. In moving to a single market the European Union has had to formulate all policies with the possibility of incoherence in mind. Martina Lawless identifies the divergence of the objectives of industrial and competition policy within the EU and resolves that there can be no further extension of the its power until this obstacle has been overcome.

"All public authorities, including the European Commission must be, and increasingly are, concerned by the problem of cross-policy coherence, be it at the micro or macroeconomic level. Contradictions between policy can spill over and cause inefficiencies to each instrument, undermining their respective credibility and creating a climate of insecurity."

Alexis Jacquemin

Introduction:

Policy coherence across public sector departments is an important determinant of their efficiency and ability to reach overall policy goals. Unfortunately, it is frequently difficult to prevent overlap, and even conflict, between departments and this is just as true of the EU as it is of national governments. A case in point is the European Union's simultaneous aims of ensuring full and free competition within the Member States, while also trying to make its mark on the international scene by breeding "Euro-champions", companies large enough to take on global competitors. Both very laudable ambitions it may be argued, but ones that can scarcely be described as complementary. This essay will first of all look at competition policy and industrial policy separately; the economic reasoning behind them and how they operate within the EU. The two will then be brought together in order to weigh up the extent of the overlap or conflict between them and how this may be addressed.

On Competition Policy in General:

Ever since the days of Adam Smith, the pursuit of perfect competition has been the central tenet of economics. At its most basic, the aim of competition policy is to bring this ideal a little closer to reality by removing distortions from the market in order to ensure efficient allocation of resources. According to traditional theory perfect competition will be characterised by large numbers of firms competing for customers, which will put pressure on prices to remain at or close to the marginal cost level. At this point, consumer surplus (or benefit) is maximised and all resources are being efficiently utilised. However, as is all too common in economics, the model and the reality diverge considerably. There are numerous reasons why markets can fail to demonstrate competitive tendencies, ranging from a simple lack of information to orchestrated collusion among firms. Explaining the existence and effect of such barriers to competition is beyond the scope of this discussion, and the emphasis is therefore turned to the operation of competition policy within the EU and how it attempts to deal with these distortions.

On EU Competition Policy in Particular:

The philosophy underlying EU competition policy is based broadly on the *laissez-faire* approach of classical economics, whereby equilibrium is expected to be brought about by the free interaction between supply and demand, once the legal framework laid out in the Rome Treaty has prevented distortions from undermining the efficiency of this system. EU competition policy aims at preventing excessive market power and other distortions applying to intra-EU trade. This means, in effect, that no attempts will be made to interfere with national competition policies as long as they relate only to domestic competition and do not have "an appreciable impact on actual or potential" trade between EU Member States.

The Rome Treaty devotes ten articles (85-94) to laying down the basic principles of competition policy in the EU. The first two of these articles (85 and 86) are known as the Cartel Rule and the Monopoly Rule respectively.

Article 85 deals with aspects of collusive behaviour such as price-fixing, joint-purchasing agreements and market sharing which are judged to be "incompatible with the common market…[as] they affect trade between Member States". This follows on from the theory that if collusion is perfect, the effect on consumers is no different from a monopoly. However, this article also acknowledges real world complications in applying an anti-collusion rule, and allows for exceptions in certain cases such as joint R&D agreements. It is hoped that in these circumstances future consumer benefits from innovation will outweigh the welfare costs of allowing firms to work together in the short-term. All such agreements must be brought to the Commission's attention to ensure that they do not become a base for the setting up of cartels.

Article 86 deals with controls on monopoly and abuse of a dominant position. The inclusion of this provision comes from the general proposition that firms in a position to influence the market will push prices above MC and reduce the levels of consumer welfare and efficiency in the economy. The implication of this article is that it is concerned with the firm's behaviour and not the actual market structure. However, in practice "dominance and abuse are almost indistinguishable. This inevitably leads to the position that a certain conduct, permissible for smaller firms, may be held to be abusive for a dominant firm". This clause therefore places the onus on the dominant firm to prove that it is *not* being anti-competitive.

One gap in this original article was the absence of controls on mergers that might result in the emergence of a dominant position. This was rectified when the Commission's Merger Regulation was adopted and came into force in 1990. This covers all mergers that have a "community dimension" in terms of turnover and potential impact. Although relatively few mergers have been refused outright, several cases have occurred where the Commission has insisted upon amendments to the deal before approval was given. One instance of this was the case of the world wide food company Nestle buying out Perrier, a leading French drinks manufacturer. Permission for the take-over was granted only on condition that a number of Perrier's brands were sold off to a third competitor and that Nestle would be banned from attempting to buy back any of these brands for at least ten years.

Articles 90 and 92 are the other important provisions on competition in the EU Treaties and they are also the ones in which potential conflict between competition and industrial policies first becomes evident. These are the Articles dealing with state ownership and aids to industry. In principle, state aids and subsidies are prohibited by the Treaty, but the number of derogations allowed meant that a total of ECU 89 billion was spent on state aids between 1988 and 1990. Before discussing this issue of conflict further, I will turn to a brief introduction to EU industrial policy.

Industrial Policy:

According to Jacobson and Andreosso-O'Callaghan, "industrial policy can refer to all activities of public authorities that affect…the performance of the manufacturing and service sectors". Industrial policy refers to active state intervention in the market to increase the productivity of the whole economy and of particular industries within it. Unlike competition policy which aims to remove restrictions on market forces, industrial policy seeks to overcome the effects of these forces and to channel them into working for particular national or industry interests.

Jovanovic identifies "respectable" economic arguments in favour of using industrial policy and includes in this group the overcoming of market failures (particularly in the cases of externalities and public goods) and the development of infant industries. He also refers to "false" or unfounded arguments sometimes used in reference to industrial policy. In this he includes employment objectives (on the grounds that this distorts the labour market and lowers the supply of labour available to growing industries) and protection from imports (as this contravenes the comparative advantage model of gains from trade).

Industrial policy is not explicitly dealt with in the Treaties underpinning the EU, and it has been observed that this area of policy is considerably weaker and less developed than competition or trade policies. This is due largely to the limited size of the Union's budget, which makes large-scale intervention difficult. Direct EU subsidies tend to go mainly to R&D improvement, through various programmes designed to increase the level of technological collaboration and co-ordination across Member States. An explicit commitment to encouraging R&D became one of the foundations of the Single European Act (SEA) in order to narrow the perceived technology gap between EU countries and firms in the US and Japan. Industrial policy in the EU also tends to favour certain sectors above others, with specific policies for areas such as textiles and airlines.

Comparing Competition and Industrial Policies:

The 1993 White Paper on "Growth, Competitiveness and Employment" argued that the pursuit of national "champions" at the expense of competitive, Europe-wide business should be avoided at all costs. This identifies the conflicting aims of the freeing up of competition and the desire to "pick winners". Jovanovic describes current EU policy as:

> *"a mixture of two irreconcilable impulses. On the on hand, there is an argument for a concentration of business, which rationalises production and which benefits from economies of scale. On the other hand there is a case for anti-trust policy which prevents monopolisation and, through increased competition, increases welfare."*

The problem facing the Commission is how best to balance these two policy areas so as to maximise economic welfare inside the Union without losing out to foreign multinationals on the global market. With the introduction of the single currency, the EU is more desirous than ever to be seen as a major player on the world scene, and sees industrial policy as a way towards this.

Andreosso-O'Callaghan and Jacobson put forward the argument that a more active and positive industrial policy "should not be confused with systematic government intervention and with protectionism". Instead such a policy could focus on building up a favourable business climate and encourage Euro-champions through public aid, fiscal exemptions and public procurements. Unfortunately however, these are the very approaches which competition policy has been trying to bar since the establishment of the Union, as they can be seen to distort the functioning of the market in favour of a select few firms.

Conclusion:

As has been demonstrated in this brief analysis, the objectives and methods of competition policy and industrial policy come into conflict more than once within the EU. This lack of policy coherence has not caused major difficulties thus far, as competition policy has developed more quickly and been given wider scope than industrial policy. However, it will not be possible for both to continue to develop along diverging paths without severe problems arising in the future.

The problem of introducing and maintaining clarity and coherence within and between policy areas is an important issue currently facing the European Union. This is particularly true of the conflict between competition and industrial policies, and it is a question that needs to be addressed before any further extension of Union power can satisfactorily take place.

Bibliography:

Andreosso-O'Callaghan, B. and D. Jacobson (1996) *Industrial Economics and Organisation.* McGraw-Hill: London.

Barnes, I. and P.M. Barnes (1995) *The Enlarged European Union.* Longman: London.

El-Agraa, A.M. (1998) *The European Union – History, Institutions, Economics and Politics.* Prentice Hall: London.

Hansen, J.D. and J.U. Neilsen (1997) *An Economic Analysis of the EU.* McGraw-Hill: London.

Jovanovic, M.N. (1997) *European Economic Integration – Limits and Prospects.* Routledge: London.

Pelkmans, J. (1997) *European Integration – Methods and Economic Analysis.* Longman: London.

Fiscal Policy In The Eurozone

Chris Dailey - Junior Sophister

The appropriation of monetary policy by the ECB increases the importance attached to fiscal policy in the pursuit of national aims. Chris Dailey investigates the flexibility allowed under the Stability and Growth agreement, and what leeway this will allow countries facing recession. He argues that the current rules are too strict and will cause major difficulties if Europe is faced with a downturn in demand.

Introduction

On January 1, 1999, eleven of the fifteen EU member states entered into monetary union, thereby relinquishing control of all national monetary policy to a central authority; the European Central Bank (ECB). Exchange rates between the countries are now irrevocably fixed and control over money supply and interest rates is controlled exclusively by the ECB. The major concern over the loss of monetary adjustment mechanisms is the potential difficulties euro area countries may have in absorbing future economic shocks in their absence. Many theorists believe active fiscal policies will become increasingly necessary to ease the negative impact of such shocks, a situation formerly dealt with mainly through exchange rate and interest rate adjustments. Unlike most monetary unions however, the euro area will not have a central authority to determine fiscal policy. This results from the reluctance of member states to give up control of sacred taxation and expenditure policies. The thought of entering monetary union without fiscal coordination consequently bred fears of greater fiscal laxity and budgetary indiscipline within the euro area. As a result, euro countries agreed upon strict fiscal guidelines as outlined in the Maastricht Treaty (1992) and the Stability and Growth Pact (1997). Significant debate has arisen as to whether the restrictions on national fiscal policies will adversely affect the ability of member states to respond to future negative economic shocks. This essay aims to examine the current role of fiscal policy within EMU and determine whether it will exhibit sufficient flexibility in the face of recession in Europe.

Fiscal Policy in a Monetary Union

In formulating monetary policy, the ECB will be able to take into account shocks that have a common symmetric effect across the euro area, but will have no means of policy response for asymmetric shocks concentrated in local, regional or national areas. In most federal countries a large part of such asymmetric stabilisation occurs through automatic wealth redistribution via the centralised federal budget. For example, in the case of a localised demand shock in the United States, money will be injected into the affected region through increased unemployment benefits and less will be extracted due to declining tax revenues. Thus the central budget redistributes income, automatically stabilising the asymmetric shock and restoring the aggregate economy closer to equilibrium. The EU budget, however, cannot perform such a function due to its small size and lack of harmonisation in taxation and expenditure. Highlighting this downfall, the EU budget currently represents 1.2% of the Union's GDP, while in the United States, government expenditure accounts for approximately 25% of GDP. How then, will the EU cope with national or regional recessions? Is centralisation of the EU budget possible in the near future? If not, are there other mechanisms by which this adjustment can occur? It is these questions to which we now turn.

Optimum Currency Areas

During the planning of EMU, it seems that very little notice was taken of the volumes of literature written on the theory of optimum currency areas (OCAs). OCA theory analyses the costs associated with formation of monetary unions and subsequently lays out the features necessary of an economic area before it should adopt a common currency. The theory claims that in order to minimise the costs associated with relinquishing control of national monetary policy, the area in question must have: (1) flexible wages and prices, (2) a high degree of labour mobility and (3) centralisation of budgetary transfers.

In order to justify the OCA criteria, we take the hypothetical example of Germany and France joining a monetary union without centralising their government budgets. A negative demand shock in France will result in an increased budget deficit due to declining tax receipts and increasing unemployment payments. As

shown above, if budgets were centralised, income would automatically be transferred from Germany to France helping to cushion the adverse impact of the demand shock. Budgets are not centralised however, so France instead sees an increase in external debt that will likely restrict its fiscal flexibility in the future. A similar lack of budgetary centralisation in the euro area should make us wary of the deficit restrictions imposed by the Stability and Growth Pact, as will be discussed below.

Even without budgetary centralisation, however, adjustment could occur through declining wages and prices in France or labour emigration to Germany. Thus labour mobility and wage flexibility would significantly reduce the need for budgetary transfers between regions or countries. Unfortunately, wages in Europe are notoriously inflexible and labour mobility low. This is probably the reason the MacDougall Report in 1977 came to the conclusion that monetary union in Europe should be accompanied by significant centralisation of the EU budget. "Failure to do so", it claimed, "would impose great social strains and endanger monetary union". Thus far, it is evident that the euro area does not fulfill the optimum currency area criteria, and consequently may face severe difficulty in adjusting to economic downturns, particularly those of asymmetric nature. The lack of wage flexibility, labour mobility and budget centralisation, combined with the loss of exchange rate and interest rate controls, will increasingly place the burden of adjustment on national fiscal policies. We must now examine the degree of fiscal flexibility currently afforded to national finance ministries and determine whether this is sufficient to cope with future economic shocks.

Fiscal rules

In 1992, the Maastricht Treaty implemented criteria for fiscal convergence between the potential EMU participants. These criteria required annual budget deficits to be held to 3% of GDP and the gross debt-to-GDP ratio reduced to 60% in order to ensure the avoidance of ‘excessive' borrowing by member states. Subsequently, the ‘Stability and Growth Pact', signed in 1997 in Amsterdam, clarified the financial sanctions to be imposed on member states that violated the Maastricht budgetary guidelines after implementation of EMU. If a country exceeds the 3% deficit requirement, it is subject to fines of between 0.2% and 0.5% of GDP. Initially, the penalty takes the form of non-interest bearing deposits, which are only converted into fines if the ‘excessive' deficit is not corrected after two years. Furthermore the fines will not be applied if the country in question is deemed by the Council to be experiencing ‘exceptional circumstances'. Exceptional circumstances include natural disasters or major recessions where GDP declines by more than 2% in one year. The Stability Pact calls on members to aim for a balanced budget over the medium term to enable the proper functioning of automatic stabilisers and also requires the annual submission of a ‘program for stability' by each member.

The reasoning behind the rules is simple. Many policy makers believed that national governments would have incentive to increase their already over stretched borrowing levels once in a monetary union. Consequently, countries such as Germany feared the negative externalities and spillover effects resulting from this excessive borrowing. If one country is on an unsustainable path of increasing government debt, they argued, it will borrow increasingly from the EU capital markets pushing the union interest rate upwards. This in turn increases the burden of debt on other countries, forcing them to follow unwanted deflationary fiscal policies. These spillover effects could further result in undue pressure on the ECB to loosen monetary policy.

This argument, however, is weakened by the ‘hard currency constraint' whereby countries may actually have incentive for greater fiscal discipline rather than less since they are no longer able to inflate their way out of debt repayments. Opponents of fiscal rules also argue that the fear of overborrowing is exaggerated and claim that markets will impose enough discipline on borrowing. The ‘no bailout' clause in the Maastricht Treaty strictly prohibits the ECB from bailing out national governments in the case of default. Therefore the markets will continue to attach a higher risk premium to countries with high borrowing and consequently apply incentives for fiscal discipline. Thus, the concern of increased fiscal laxity resulting from market failures that has pervaded EMU policy-making since Maastricht, may be ill founded. Euro members may come to regret the signing of the Stability Pact once hit by recession.

The Case for Flexibility

OCA theory suggests that in the absence of a centralised budget, national fiscal policies should be given greater flexibility and autonomy than is currently allowed under the Stability Pact. There exists a serious risk that the pact will interfere with automatic stabilisers. Those countries with deficits near to the 3% maximum

will be restrained in their ability to run counter-cyclical deficits during downturns. This is a likely possibility in the case of Germany and France whose deficits for 1999 are projected to be 2.1% and 2.4% respectively. Such lack of budgetary 'headroom' may force these countries to pursue restrictive fiscal policies at a time when there is a need for the opposite. Temporary cyclical fluctuations will become more severe than necessary and could result in prolonged recession.

The Stability Pact: A Step Too Far?

The Stability Pact set out to prevent one country from borrowing excessively at the expense of others, in order to aid the ECB in its primary objective of ensuring price stability. As ECB President Wim Duisenburg puts it, "it should produce a balanced policy mix that does not overburden monetary policy". The European authorities continue to support the fiscal restraints, yet few economists remain optimistic. Are the rules too strict? Many economists believe they are unnecessary and will only prevent automatic stabilisers from functioning efficiently. The Economist calls the pact a 'fiscal straitjacket' and points out that had the pact been in force over the past ten years, Germany and France would have had to pay fines of 0.5% of GDP in 3 and 4 of those years respectively. The IMF takes a relatively more supportive view, stating that as long as countries maintain balanced medium term fiscal positions, the Stability Pact will not inhibit the operation of automatic stabilisers. In saying this, the IMF does acknowledge that 'deep and protracted' recessions are likely to require recourse to the 'exceptional circumstances' clause. Unfortunately, however, countries do not seem to be aiming for budgetary balance over the medium term. This is evident in the Commission's recent criticism of the French stability plan, where it complained that deficit targets for 2002 of 1.2% offered "no safety margin for the consequences of weaker than expected growth."

There is no question that the Stability Pact is restrictive. Member states have trouble keeping to the Maastricht guidelines in times of prosperity, yet are expected to prevent increasing deficits when times are tough. The 'let-out' clauses described above also seem quite inflexible. A 2% fall in GDP constitutes a major recession. Much smaller, not to mention more common, output declines can cause significant increases in unemployment and aggravation for an economy. Fines will only increase instability and potentially lead to political dissent within the euro zone. The pact certainly has the right idea in terms of promoting balance in the medium term, and such policies, if followed, would surely leave room for the functioning of automatic stabilisers. Is this realistic? Many national governments cannot, or do not, take medium term views due to political constraints and electoral cycles. In almost all euro countries, for example, governments are constrained by democratically elected parliaments when it comes to shaping fiscal policy. If such political effects are pervasive, fiscal policy cooperation within EMU may be doomed with or without the Stability Pact.

Conclusion

Monetary Union has arrived in Europe. All participating countries have long known its implications for monetary policy, but even today, few can accurately predict the future of fiscal policy in Europe. EMU has gone ahead despite the existence of structural rigidities and a conspicuous lack of harmonisation in budgetary policy. As a result, future economic shocks in Europe may unduly lead to recession, and recessions may themselves become unnecessarily prolonged.

The ideal solution to cope with temporary asymmetric shocks in the euro area would be to centralise a significant proportion of the EU budget. This does not imply an EU welfare system comparable to those of European nations today, as this would lead to further economic distortions and unavoidable political consequences. Perhaps a limited centralisation of unemployment benefit systems would be the solution. This would eliminate the problem of undue pressure on ECB, automatic stabilisers would perform at the European level and the fiscal rectitude sought by the Stability pact would become easier to maintain. Unfortunately, many countries feel they already contribute too much to the EU budget and political disputes will keep such a system away for several years to come.

National fiscal policies will be integral to the success of the euro zone countries adjusting to economic shocks. They will also likely be the key source of dispute between these countries until greater coordination is achieved. Furthermore, political cycles cannot be ignored. This is evident as the recent change of leadership in Germany has already led to calls by the finance minister Oskar Lafontaine for loosening of the fiscal stance. Currently fiscal policy within the euro area does not look sufficiently flexible to cope with recession. If shocks remain largely asymmetric in nature, these downturns will be particularly painful. In the

presence of such shocks, the Stability Pact must be used in a flexible manner with the Council taking a discerning role in its interpretation of the let-out clauses. If the rules are strictly applied, however, there may not be long to wait before we see the economic and political difficulties that will result from a European recession.

Bibliography

De Grauwe, P. (1997) (3rd ed) *The Economics of Monetary Integration.* Oxford University Press: Oxford.

The Economist (11/4/98) "Maastricht Follies".

The Economist (24/10/98) "The Merits of One Money".

The Economist (19/12/98).

The Economist (2/1/99) "Gambling on the Euro".

The European (7/8/97) "There is Life After Debt".

Financial Times (17/2/99).

Goodhart, C. (1994) *National fiscal Policy within European Monetary Union: The Fiscal Implications of Maastricht.* LSE Financial Markets Group.

IMF (October 1997) "EMU and the World Economy" in *World Economic Outlook*.

Pollard, P.S. (1994) "Monetary and Fiscal Policy in a Monetary Union" in Scobie, H.M. (ed) *The European Single Market: Monetary and Fiscal Policy Harmonization.* Chapman Hall: London.

The Euro – Challenger To The Global Currency Title?

Marc Feustel – Junior Sophister

Marc Feustel takes a global view of the introduction of the euro, examining its potential claim to being a major world player in currency transactions. He explores the gains that could be reaped from attaining such a position, but concludes that international approbation of the euro will be gradual and much depends on the credibility of the process by which the currency is managed.

Introduction

On 1 January 1999, Europe was host to one of the most important events in economic history: eleven of the fifteen EU member states formed an Economic and Monetary Union (EMU) and adopted the euro as their single currency. This development will lead to a fundamental transformation of today's global economic landscape. Much of the attention that EMU has received has been focused on its internal structure, but the impact of the euro on the global economy is also of paramount importance. This essay will take a global perspective in attempting to assess the impact of Europe's single currency on the international monetary system. It will address the question of whether the euro can be expected to become a major international currency and what benefits could be derived from this status.

For this analysis, we must ask whether international currency status is important. This status offers two kinds of benefits: political and economic. Firstly, it is clear that a position of global monetary supremacy offers substantial political benefits. Since World War II, global monetary affairs have been dominated by the American dollar. This has allowed the US to insulate its policy-making process from outside influences. It has also enabled them to pursue foreign policy objectives with increased clout and fewer constraints. There are economic gains too. If a currency is held internationally, the issuer will benefit from *seignorage* gains. This refers essentially to the gains made by governments from printing money. Seignorage can also be derived from a liquidity discount on short-term government debt. High international demand for a currency has the effect of reducing the real yields that the government has to pay on its debt, thus providing that government with seignorage gains. The total gains from seignorage are of the order of 0.2 or 0.3% of GDP. However the benefits of becoming a major world currency cannot be quantified purely in terms of economic profit. Should the euro become a powerful currency, the eurozone will benefit from boosted economic and political credibility.

How can the euro achieve this international currency standing? Three main factors are considered to determine the importance of a currency in the international system: the use of the currency as a ‘vehicle' currency, the use of the currency as a ‘reserve' currency and whether the currency is held in international private portfolios.

Vehicle currency

One of the main factors in establishing a currency's international importance is its use in trade transactions i.e. its use as a vehicle currency. A vehicle currency is issued between the two participants in trade transactions. Theory states that exporters generally have a preference for home currency, however when no such preference is stated they generally choose a currency with a deep and liquid foreign exchange market and a high degree of acceptability. Theory also tells us that the use of a currency as a vehicle will lead to ‘thick' externalities i.e. the more widely the currency is used for trade and invoicing, the longer it will continue to be used. In practice, world exports are disproportionately invoiced in the currencies of big exporters, with a clear majority (48%) of invoicing in US dollars. The advent of EMU has changed the balance of global trade transactions. The eurozone now controls the highest share of world trade, 20.9%, above 19.5% in the US. However, figures for 1997 show that only 21% of exports were invoiced in eurozone currencies. We could therefore anticipate a large increase in the use of the euro in international trade transactions. If we consider the 1:1.5 ratio of exports-to-invoicing for the Deutsche Mark and apply it to the single currency, we can expect it to become used in at least 40% of world exports. Here a caveat must be

placed on this potential expansion of the euro as a vehicle currency. In the early stages of its existence, the uncertainty surrounding the new currency will delay its widespread use in trade transactions. Thus, the aforementioned expansion should be a gradual one. Let us now consider the euro's use as a reserve currency.

Reserve currency

A reserve currency is one which is widely held in international central bank reserves. The dollar is currently the dominant reserve currency. Figures for the end of 1997 show that 57% of global official foreign exchange reserves were held in dollars. Will the euro put an end to this dominance? Central bank reserves are based strongly on trade links. Thus we can expect a strong shift towards the euro in Europe's main trade partners' reserve holdings. This essentially concerns Central and Eastern Europe. The Chinese Central Bank has also announced that it will hold a much higher proportion of its reserves in euros than in EMU component currencies in the past. However, in general this phenomenon is likely to be far less pronounced in Asia and Latin America due to their important trade ties with the US economy. We must also place the process of diversification of official reserves in its historical context. Over the past twenty years the share of the dollar in official reserves has dropped by at least 13%. The euro will not provide a trigger for the diversification of reserves, but will merely be a contributing factor to this phenomenon. Also, central bankers are notoriously risk-averse investors. They are likely to stay away from short-term eurozone government debt, as its credit risk will initially be very difficult to assess. They will also be wary of making abrupt changes in their reserves, as this process of diversification can be very disruptive for foreign exchange markets. Hence, the move towards the euro can be expected to be gradual.

The reserves of the eurozone's own European Central Bank will also affect the role of the euro as a reserve currency. In 1997, the participating countries held $45 billion of eurozone currencies. On January 1, 1999 $45 billion of eurozone currency reserves became domestic currency. These excess reserves added themselves on to the already high level of reserves in the European System of Central Banks (ESCB). Empirical evidence shows that the share of trade in an economy is strongly correlated to the reserve level. With the advent of EMU, intra-European trade became domestic, thus reducing the share of trade in the eurozone economy from 25% to 10% of GDP. Currently European central banks hold too many foreign reserves, up to six times those of the United States. These two factors both point to a decrease in foreign reserve holdings in the euro area. But once again this process will be gradual. The ECB has only just been formed and needs to establish its monetary credibility. In its early years it may want to maintain high reserve levels so as to achieve this. Like other central banks, the ECB will avoid abrupt adjustments of official reserve levels so as to avoid the disruption of foreign exchange markets. Robert Solomon also points out that "a currency can take on an increasing role as a reserve currency only if its issuer incurs an overall balance of payments deficit". This is something that the ECB may want to steer clear of before its monetary credibility is well established. Thus despite a clear movement towards the euro as a reserve currency, until EMU has established itself, this process will most likely remain very gradual. At this point, we must note that official reserve holdings are very small in comparison to global assets and liabilities. For instance official dollar holdings are small compared to US assets and liabilities, which are estimated at $3.5 trillion and $4 trillion respectively. The behaviour of private investors is thus likely to have a more sizeable impact on the international monetary status of Europe's single currency.

Private Portfolios

Global private portfolios amounted to $7.5 trillion in 1995. Of that amount more than half was denominated in US dollars. This is perhaps the area where the euro will have the biggest impact. In the World Economic Outlook Report of October 1998, the IMF states that "shifts in private sector supply and demand for euro-denominated assets will almost certainly swamp the effects of the re-balancing of official reserves". The reasons for this potential increase in euro-denominated assets are numerous. Firstly, the sheer size of the euro area will give rise to the development of a deep and liquid market. Also the stability-oriented policy mix of the ECB, driven by the price stability and budgetary discipline objectives, should make the euro an attractive store of value for investors. Current European securities markets are significantly underdeveloped compared to the US or to Britain. With the progression of EMU we can expect to see the integration of financial markets in euroland through alliances such as that between the London and Frankfurt stock exchanges. This deepening of securities markets usually results in the reduction of transaction costs. This in turn should increase the supply and demand for euro-denominated assets thus "tending to make the euro a major international currency". It is generally agreed that these portfolio shifts will not occur in the short-term.

However, their impact in the medium and long-term is thought to be far more substantial. Hélène Rey and Richard Portes of the London School of Economics have conducted research on European financial market integration. They claim that if financial market integration in Europe progresses sufficiently, the overall size of European securities markets could bring transaction costs low enough for the euro to "replace the dollar as the main international currency for financial asset transactions". Once again these remarks must be placed in a broader context. The diversification of private portfolios has been increasing for quite some time. From 1988 to 1995 the share of EU currencies in private portfolios has risen from a quarter to a third. International portfolios have also been growing at an astounding rate, with a 300% increase from 1985 to 1995. Also, this greater securitisation in euroland will be a "grindingly slow" process, due to the need for highly controversial measures such as tax harmonisation, regulation, supervision and accounting and trading rules. Ultimately the area of private investment will be the most affected by the euro. However the behaviour of the private investor is often unpredictable. It is clear that a gradual shift into euro-denominated assets will occur. As for the extent of this shift, it is almost impossible to estimate.

Conclusion

This analysis has shown that the creation of the euro will lead to a distinct rise in European standing in the international monetary system. The euro will become a more powerful reserve and vehicle currency than any of Europe's pre-existing currencies. More importantly, we can expect a definite shift towards euro-denomiated assets in private portfolios, albeit one of uncertain magnitude. However, the point has recurred throughout this discussion that this process will be gradual. In any case, it is clear that the impact of the euro on the international monetary system will depend greatly, if not entirely, on the *credibility* of the single currency. This lies largely in the hands of the ECB. Theoretically the ECB's price stability and budgetary discipline objectives should ensure that the euro becomes a credible currency. However, this credibility also depends on the ECB's accountability to the eurozone population. These are the private investors that will have the option of investing in the euro. Since the inception of EMU there has been a highly animated debate as to whether the European Central Bank should be politically accountable. In early February of this year, France's Finance Minister, Dominique Strauss-Kahn, stated that the ECB needed to be part of the democratic system and not "purely a technical instrument". Politicians across Europe are rightly concerned with Europe's growth problem and the increasing dangers of deflation. However, their attempts to force the ECB to bend to their will is hindering, not helping, the process of establishing the euro. At such an early stage in its existence, the ECB's credibility can only be undermined if it is seen to be succumbing to political pressure.

Bibliography

Deutsch, Klaus Günter (1999) "External Representation and Exchange-Rate Policy of the Euro Area", in *Deutsche Bank Research, EMU Watch* 64.

The Economist (14/11/98) "The International Euro".

The Economist (21/11/98) "Securities Blanket".

European Commission (1998) "The Euro Explanatory Notes" in *Euro Paper 17.*

The Guardian (18/2/99) "Sailing into choppy water".

IMF (October 1998) "World Economic Outlook".

IMF (May 1997) "Characteristics of the Euro, the Demand for Reserves, and Policy Co-ordination Under EMU."

Karczmar, Mieczyslaw (1998) "The European Monetary Union: an American Perspective" in *Deutsche Bank Research, EMU Watch* 54.

Persaud, Avinash (1999) "International Role of the Euro", in P.Temperton (ed.) *The Euro*. Wiley: Chichester.

Rey, Hélène (September 1998) "Gearing Up for a Fight: the Euro, the Dollar and the International Monetary System" in *Centre for Economic Performance*, *CentrePiece*.

Solomon, Robert (1999) "International Effects of the Euro" in *The Brookings Institution, Policy Brief* 42.

Challenges Facing The ECB

Paul Slattery - Senior Sophister

The advent of EMU in Europe has led to a new economic power being created in the form of the European Central Bank. Paul Slattery explores the options available to this new institution in managing monetary policy for the eleven countries that have adopted the euro. He examines the stated primary aim of price stability and looks at the importance of the ECB's independence in its pursuit of monetary targets.

Introduction

As recently as ten years ago the idea of merging the European Union's national monetary systems seemed fantastic. On January 4th 1999 this remarkable vision became a reality: the currencies of the 11 participating members of Europe's Economic and Monetary Union were irrevocably fused. The institution at the very heart of European economic policy is now the European Central Bank.

In designing EMU, the architects laid great emphasis both on the independence of the European Central Bank and on the simplicity and severity of its anti-inflation objective. It undoubtedly faces many challenges. These stem from institutional debates over policy direction and statistical methods, and from the diverse political standpoints of the eleven cultures that it represents. In this essay I will overview these problems.

The European System of Central Banks (ESCB) comprises the European Central Bank (ECB) and the National Central Banks (NCB) of the Member States which have adopted the Euro in Stage 3 of EMU. If and when all 15 Member States participate in the euro area, the term ‘Eurosystem' will become a synonym for the ESCB. The Eurosystem is governed by the Governing Council and the Executive Board of the ECB:

The Governing Council comprises all the members of the Executive Board and the governors of the NCB's of the Member States who have adopted the Euro.

The Executive Board comprises the President, the Vice-President and four other members appointed by the Heads of State or Government of the Member States which have adopted the Euro.

The Central Issue: Price Stability

As set out in Article 2 of the Protocol on the Statute of the ESCB agreed at Maastricht, "the primary objective of the ESCB shall be to maintain price stability". Only then, when this is achieved (i.e. "without prejudice to the objective of price stability"), is the ECSB to "support the general economic policies and the objectives of the Community as laid down in Article 2 of this Treaty" .

The reason for this owes a lot to the legacy of the German Bundesbank. Its rigid concentration on the achievement of such stability is cited as being responsible for its comparative success in achieving a successful combination of comparatively low inflation and high economic growth. The ECB outlines very clear reasons for this objective in its initial monthly bulletin:

- Price stability improves the transparency of the relative price mechanism, thereby avoiding distortions and helping to ensure that the market will allocate real resources efficiently across both uses and time.
- Stable prices minimise the inflation risk premium in long-term interest rates, thereby lowering long-term rates and helping to stimulate investment and growth.
- If the future price level is uncertain, real resources are diverted to hedging against inflation or deflation, rather than being put to productive use i.e. stability provides the environment for real investment decisions.
- Price stability avoids the large and arbitrary redistribution of wealth and incomes that arises in inflationary as well as deflationary environments.

Charles Goodhart points to another "more intuitive" reason:

"with there being no trade-off in the medium and longer term between growth and employment on the one hand and inflation on the other (a vertical Phillips curve), the best that any authority with responsibility for controlling nominal variables can do is to achieve price stability".

No direct qualitative measure could be set for the concept of 'price stability' during the first two stages of European Monetary Union. Instead the Maastricht criteria were seen as the working requirements to the ideal. The interpretation and flexibility of the criteria was a hotly contested issue. The 'fudging' of government deficits provided a stumbling block for the EMI, despite its preference for starting the euro on the road to price stability with a small group of strict adherers. The objective of price stability is set by the Maastricht Treaty, yet its method for reaching that goal is not. Effective monetary policy will be where the new European System of Central Banks will consolidate the price stability ideal.

Monetary Policy

The EMI 1996 report to the Commission suggested five candidate strategies for overall monetary policy: exchange rate targeting; interest rate pegging; nominal income targeting; monetary targeting; and direct inflation targeting.

Intermediate monetary targets have formed the centrepiece of Bundesbank monetary frameworks since the late 1970s. In contrast, many smaller states generally adhered to an exchange rate objective and refrained from setting monetary targets in their pursuit of the common objective of price stability. The larger EU members downgraded their monetary targeting systems in the 1980s, with the exception of the German Bundesbank. It is argued that this emphasis on assessing monetary developments from a medium term perspective has helped the Bundesbank reduce the inflation rate, which had risen in the wake of unification. Annick Bruggeman argues that a monetary targeting strategy is more transparent than an inflation targeting strategy; it leaves less room for interference from governments and it enables the ECB to inherit the credibility of the Deutsche Bundesbank, which will be particularly important at the start of EMU.

The main elements of the ECB's strategy were presented to the public on the 13th October 1998:

- A quantitative definition of the primary objective of the single monetary policy, namely price stability
- The 'two pillars' of the strategy used to achieve this objective:

  - A prominent role for money, as signalled by the announcement of a reference value for the growth of a broad monetary aggregate.

  - A broadly based assessment of the outlook for future price developments and the risks to price stability in the Eurosystem as a whole.

The quantitative definition of price stability "shall be defined as a year-on-year increase in the Harmonised Index of Consumer Prices (HICP)". A figure of below 2% is to be maintained over the medium term. This measurement presents a challenge to the Eurostat analysts. Among economists in academic, financial and central banking circles, there is a broad consensus that various forms of 'measurement bias' can exist in consumer price indices (CPI's). The HICP is relatively new and long runs of back data do not exist. Therefore, studies of the magnitude of bias are inconclusive. A quantitative reference value for monetary growth has been announced by the Governing Council as one pillar of the overall stability-oriented strategy. On 1 December 1998 the Governing Council announced its reference value for M3 growth. The derivation of the reference value was based on the following medium term assumptions:

- Price stability must be maintained according to the Eurosystem's published definition, so that year-on-year increases in the HICP for the Euro area are below 2%.
- The trend of real GDP growth lies in the range 2-2.5% per annum.
- Over the medium term, the decline in the velocity of circulation of M3 is in the approximate range of 0.5-1% each year.

In the other areas of monetary policy, the new ECB will use repurchase operations i.e. buying and selling securities to affect interest rates. The EMI report outlines in careful detail the criteria that it will use to assess the eligibility of prospective counterparts and assets. A broad range of eligible counterparts is consistent with the ESCB's principle of decentralisation in its execution of monetary policy operations. The EMI claim "it

will enhance policy efficiency and equal treatment and facilitate the smooth functioning of the payment system". With regard to asset eligibility the ESCB will prioritise with two types of lists:

1. Tier one lists will consist of marketable assets, which fulfil uniform Euro-area wide eligibility criteria specified by the ESCB and monitored by the ECB.
2. Tier two lists will consist of additional assets either marketable or non-marketable, which NBC's consider important for their national financial markets and banking systems.

The minimum reserve system which the Bundesbank uses to rein in the money supply is also referred to in the EMI report, stating that:

> *"The minimum reserve system which will also be available could be used for stabilizing money market interest rates, creating or enlarging a structural liquidity shortage in the money market and possibly contributing to the control of monetary expansion".*

These ratios effectively involve a pecuniary penalty on banks to the extent that interest paid by the central bank on them is below market rates.

Monetarism Revisited

In the heyday of monetarism in the early 1980s, economists and traders pounced eagerly on every new money supply statistic. Most central banks then set formal money targets, and every wiggle in the data set was scrutinised for clues to the next move in interest rates. Since then, the notion that faster money supply growth automatically causes higher inflation has fallen out of favour. The announcement by the ECB to nominate a ‘reference value' derived from the M3 measurement of money growth represents a *renaissance* in economic thinking.

The money supply is useful as a policy target only if the relationship between money and nominal GDP - and hence inflation - is stable and predictable. The way the money supply affects prices and output depends on how fast it circulates through the economy. The ‘velocity of money' can suddenly change as a result of financial innovation and deregulation. This can drastically affect the usefulness of broad money supply measures as reference value indicators for monetary policy.

Several economic studies suggest that pan-European measures of money are much more stable and a good indicator of growth and inflation in the region as a whole. One reason is that in closely integrated economies, firms and individuals tend to switch between currencies in response to interest rate differences, an option no longer available under EMU. However, the shift from national currencies to the euro, combined with the liberalisation of financial markets represents a huge structural change. This may cause big changes in the behaviour of firms and individuals and hence the previous relationship between money and inflation could be endangered. The Euro money supply could therefore be unstable.

> *"The money supply can often be a useful early-warning signal. A wise central banker, like a wise driver, should regularly check the speedometer. But a driver who stares solely at the speedometer is likely to have a nasty crash. Likewise, central bankers need to monitor a large range of economic and financial indicators if they want to be sure of achieving their ultimate goal of low inflation".*

This is why the Governing Council has announced that the second ‘pillar' of the stability-oriented monetary policy shall be the scrutiny of a wide range of economic variables. One of the institutional challenges facing the ECB will be the collection and careful sorting of statistical data from which to optimise monetary policy. The statistical information that is needed will be wide ranging. In addition to monetary and balance of payments statistics, it will use statistics on costs and prices, government finance, output and demand and the labour market.

The 1996 EMI report provides analysis of the collection process. It suggests the importance of harmonisation and consolidation of aggregates. Harmonisation refers to the creation of consistent statistical variables and is necessary due to the inconsistency of definition in statistical practice. Consolidation is required because the revised money stock "will not be simply the sums of the national money stock and its counterparts and the balance of payments, but will include cross-border holdings of deposits and other monetary instruments within the area".

An argument against the monetarist approach links to the credibility and accountability of the new central bank. The ECB would like to adopt the credibility of its blueprint, the Bundesbank. Yet in practice the Bundesbank does not pursue a pure monetary target. Because of its long track record of delivering low inflation, occasional overshoots have not undermined the Bundesbank's credibility. The ECB starts without this advantage. Establishing such credibility will prove hard if it sets a monetary target and then is forced to overshoot it. The ECB could be judged by its results more easily under an explicit inflation target.

The Issue of Independence

It could be argued that the new European Central Bank is the most fiercely independent bank in the world. America's Federal Reserve is required by law to take output and employment into account alongside inflation, for which no numerical target is set. Independence entails the legal framework, the political resolve and the economic manoeuvrability necessary to achieve a consistently low inflation rate with growth, despite outside influences.

In his article "An ECB and Independence", Rolf Ceasar highlights the arguments for and against independence. The first political reason in favour stipulates that an independent central bank is recommended because it can operate regardless of the political pressures that government and parliament cannot avoid. It is therefore consolidated as a guarantor of continuous stabilisation policy due to its long term policy horizons. The second economic reason highlights the danger of a central bank subordinated to political bodies risking 'fiscal inflation'. This is because of the fact that politicians tend to look at the central bank as a source of financing, neglecting the risks and detrimental effects of inflation. The third 'technical' reason cited is that an independent central bank is recommended due to its faster decision making process and because of the superior economic qualifications of central bankers over politicians(!).

The first main argument against an independent central bank stems from Keynesian concerns over the lack of fiscal/monetary harmonisation, leading to serious 'friction losses' resulting from a monetary policy not necessarily co-ordinated with fiscal policy actions. Politically there is also an argument that there is a deficient political justification for a foreign independent central bank.

Certainly the argument concerning poor fiscal/monetary policy harmonisation is a pervasive one. Ceasar also highlights the fact that actual independence will depend on the degree of social consensus on the "ranking of price stability as regards other economic objectives" and the "sustainability of an institution pursuing this in the risk of conflict with government".

Strong evidence suggests that central bank independence is indeed a good idea i.e. any given level of inflation can be achieved more cheaply in terms of forgone output and employment, if firms and workers believe that monetary policy is free from undue political pressure. The danger is that EMU's architects have gone too far. The European Union, with its weak parliament, is acknowledged in any case to have a 'democratic deficit' at its centre; the powers of the new central bank could make that deficit all the greater. In economic terms, the danger is simply that the ECB will take its instructions literally – and will try to screw inflation down to nothing regardless of wider economic repercussions.

Fiscal Frictions

One of the greatest challenges that the new ECB will face is due to the diverse economic makeup of the countries involved in the project. A recession that affected the Euro 11 as a group could only be dealt effectively with an institution such as the new ECB. The more likely scenario will be the need for a response to fluctuations that are not system-wide.

The eurozone is not an 'optimum currency area' i.e. it is not a region whose constituent parts are affected in broadly the same way by typical economic disturbances. It is subject therefore to 'asymmetric shocks'. This problem is exacerbated however in a European context by disparities in relative prices and poor labour mobility within the Euro-11.

Governments see the need to improve the supply side by de-regulation. The price of over-regulation is a higher equilibrium rate of unemployment. However the recent shift to the left in European politics makes this kind of action seem implausible in the short run.

If a country suffers a recession, traditionally it could cut interest rates, stimulating demand by lowering the cost of credit and causing the currency to depreciate. Under EMU this option is no longer viable. That leaves fiscal policy, but policy-makers are to find little solace for stimulating demand here. The Stability and Growth Pact requires budget deficits to be held below 3% of GDP. Violators are to be fined subject to a vote of governments, unless output has fallen by 2% or more in the year in question.

The economic reasoning by the Governing Council is quite sound. Goodhart cites the problem of lax fiscal and tight monetary policy both in the USA in the early '80s and Germany since reunification.

> *"Thus if the EU should wish to achieve some particular outcome for the exchange rate and with monetary policy predicated to the achievement of internal price-stability, the EU fiscal policy has to be adjusted to that end."*

Can this be achieved given the decentralised fiscal process in the E.U however? If the European Central Bank is to have more independence to achieve price stability then the political system must reflect a more harmonised and cohesive position to achieve the monetary/fiscal balance. This requires an "ever closer political union". With regard to the Stability and Growth Pact however falls in output of 2% or more are extremely rare; far smaller downturns would cause unemployment to rise quickly and be universally regarded as 'recessions'. And the restriction is too tight in another way: governments that tried to anticipate a downturn by relaxing fiscal policy early, thereby breaching the 3% limit before output fell, would also face fines.

If demand in Europe grows more slowly than forecasted and the post-Maastricht fudges come to pass, deficits will rise asymmetrically. If the EMU survives then there would be two alternatives. To let the countries concerned endure the recession, thus bringing the entire venture into question or to enlarge the fiscal powers available to Brussels. This would allow automatic fiscal stabilisers to work within Europe as they do in the US.

Conclusion

Apart from the challenges outlined in this essay the ECB must make a clear effort to make itself known to the average European. This is the greatest political agenda, to assuage and convince the voter. Surprisingly, recent studies have reported that people 'feeling well-informed about the euro' account for as low as 25% of those surveyed. The ECB must therefore pay attention to the economic and political climate which it inhabits. The best way to win popular opinion is to explain clearly what it proposes to do and by balancing the short-term demands of low inflation on the one hand, with growth in output and employment on the other. Independence to achieve the 'price stability' ideal is fine once the bank can be made accountable in the long run by the surrounding political process. Governments will have to find a way to make fiscal policy respond far more flexibly to economic circumstances than the Stability and Growth Pact implies. This could be achieved perhaps, by requiring that budgets be balanced over the course of the economic cycle, but leaving them free to run further than 3% into deficit at times of slowing demand. In any event this seems likely to be the issue on which Europe's political future depends.

Bibliography

Baltensperger, Ernst (1992) *Exchange Rate Regimes and Currency Unions.* Macmillan Press: Hampshire.

Bruggeman, Annick (1998) "Can Monetary Aggregates Play a Role in the Monetary Policy Strategy of the ECB ?" *UFSIA 1998*.

Ceasar, Rolf (1994) "A European Central Bank: The Issue of Independence" in Johnson, Christopher and Stefan Collingon (eds) *The Monetary Economics of Europe.* Pinter: London.

The Economist (November 1995) *European Monetary Union: Marked.*

The Economist (April 1997) *EMI preparing to die.*

The Economist (December 1995) *Europe learns its alphabet.*

The Economist (January 1999) *Europe's new Currency.*

The Economist (August 1998) *Follow the money.*

European Central Bank (January 1999) *Monthly Bulletin.*

European Monetary Institute (April 1997) *Annual Report 1996*. EMI: Frankfurt am Main.

Goodhart, C. A. E. (1992) *EMU and ECSB after Maastricht.* LSE Financial Markets Group: London.

Financial Reform In Transitional Economies: The Case of Hungary

Aimee Cullen – Senior Sophister

The ease with which the financial sector of formerly centrally planned economies manages the transition to the free market is a crucial determinant of the overall chances of success for the economy. Aimee Cullen takes the example of Hungary and how it dealt with this transformation to demonstrate the challenges faced by other transition countries.

Introduction

It is my opinion that financial sector reform is at the crux of successful transition. It is only logical that an efficient market system will require the efficient allocation of capital. In going from a centrally planned economy to a market economy, there will be a need for the creation of a set of new instruments, institutions, and regulations.

This paper outlines briefly the features of a financial sector under central planning, focusing on the case of Hungary as a means of highlighting the problems faced by an economy undergoing transition and the available measures to overcome these problems. The difficulty and complexity of such a process should be obvious to all from this case study.

The Financial Sector under Central Planning

As participants in a market economy, we are familiar with a two-tier banking system. On one level, the Central Bank functions as the governments bank; sole issuer of currency; lender of last resort; and regulator of the commercial banks. On a second level are the independent commercial banks that serve the needs of households and firms on a day to day basis.

Under central planning, the banking sector was essentially weak. It was an instrument of the central planning authority. A single bank performed both central and commercial banking functions. This Monobank carried out the necessary functions of a western style central bank, as well as making loans and some investments. Branches of the Monobank carried out the functions of commercial banks. Some systems may have included development banks or investment banks that were sector specific.

Households could not deal with the commercial banks, with the only exception of the State Savings Bank. If the system permitted the ownership of property, citizens could arrange a mortgage with this bank. Loans for other reasons, such as the purchase of durable goods did not exist. The lack of banking facilities such as checking accounts was of no real inconvenience to the citizens of centrally planned economies as most transactions conducted were in cash.

The commercial banks held deposits for enterprises only. Banks in the planned system carried out transfers, and in this respect, were often merely accounting agencies. As a result, there was no need for a separate tax collection mechanism.

Balances held by enterprises on their accounts with the State Bank were available only for planned transactions, and as a result there was no real incentive for enterprises to accumulate financial assets.

This credit system gave the government an additional means of controlling enterprise activity. An enterprise requiring working capital would only receive it if the purpose was in accordance with the plan.

It is clear from the above discussion, that the commercial banks did not have any real input into the lending process. Lending decisions were based not on profitability but on government guidelines geared towards implementing the economic five-year plan. In their paper, Catte and Mastropasqua list five formal conditions on which banks based their lending: accordance with the plan, a specific purpose, adequate collateral, repayability, and fixed maturity. The existence of the plan meant that the banks were not required to assess

the riskiness of any project or the creditworthiness of the applicants. This clearly laid the foundations for banking problems when bad loans emerged.

The commercial banks, especially in Hungary, did not face any liquidity restraints, and so were able to lend to a virtually unlimited extent. This resulted in a system whereby, loss-making enterprises were rewarded with unlimited credit facilities, even though the likelihood of those loans ever being repaid was minute. The main reason for the unlikely repayment was the existence of soft-budget constraints, which did not require them to keep their costs under control. Smaller, more profitable firms in the non-state sector facing cost constraints were denied access to credit facilities. This is obviously inefficient and would be unacceptable in most market economies.

Present in most centrally planned system is bargaining. Enterprises can bargain for everything from subsidies to the level of taxation they should pay. Each enterprise's position in the plan results in what has become known as ‘Investment Hunger'- the allocation of funds on the basis of size. In particular, enterprises benefit from the absence of any cost constraints or bankruptcy because the central planning authorities can always be relied upon to bail out loss making firms in the state sector. Provision of extra funds can also be arranged with much ease, as long as the project is covered by the plan. Therefore, firms' actual demand for investment funds is interest inelastic, because it depends on other factors, most notably the decision of central planners.

In brief, the problems inherent in a centrally planned system were an absence of cost constraints, an absence of liquidity restraints, an absence of bankruptcy and no assessment of creditworthiness. The economies after transition inherited these problems as well as the resulting effects.

The Case of Hungary:

Hungary was not a big-bang liberaliser; instead, it implemented reforms on a gradual basis. It is believed that origins of the financial distress of the banking system in Hungary lie in the legacies of the old centralised system. The fiscal budget provided the necessary inter-mediation by transferring liquidity from households or the external sector to the production sector. The state withdrew from capital markets leaving a significant void. The banks inherited bad loans as well as bad customers. The government did not do too much to wind up loss-making state owned companies and the banks did not have enough reserve capital to write off bad loans and to initiate foreclosure in the early stages of transition. Abel et al observes that the governments did not grant the newly created commercial banks sufficient autonomy nor did they provide them with a strong enough capital base to carry out the inter-mediation efficiently. Bonin also recognises the problems that arise after state withdrawal: "bank failure is a crucial part of the general problem of withdrawal from the banking sector, since misguided policies may generate mechanisms which in fact reverse rather than promote reforms".

The basis of reforming the financial sector was the decentralisation of the banking system, as well as implementation of regulation.

Financial Institutions:

Prior to the economic reforms of the mid to late 1980s, the financial institutions of Hungary included, the Ministry of Finance, the Hungarian National Bank, five major and several smaller commercial banks. The Ministry of Finance oversaw the financial and banking system.

In 1987, a new two-tier banking system was unveiled. This system was likened to the German-Austrian universal banking model. It consisted of several banks supposed to function as genuine, profit-making credit institutions. Under these reforms, the Hungarian National Bank was stripped of its commercial bank function, but remained the country's bank of issue and its central bank. The National Bank then established the national payment and accounting system, announced rules on money circulation and co-ordinated relations with international financial institutions. As regulator of the money supply, the National Bank used instruments such as credit policy, interest rates and, most important to strengthening the banking system, obligatory reserve requirements.

The president, rather controversially, however heads the National bank.

Five commercial banks were created in the process of reform. These were:

- Hungarian Credit Bank
- Budapest Credit and Development Bank ltd.
- Hungarian Foreign Trade Bank
- General banking and Trust Company
- National Commercial and Credit Bank

The Act on Financial Institutions defines banking activities, the types of banks, rules for establishment of banks, capital adequacy and liquidity requirements and the creation of reserves. All of the banks were Hungarian-owned companies and were licensed to perform a full range of commercial banking services and provide short term credits. The banks were established as joint stock companies, the state was a majority shareholder, represented by the Ministry of Finance. The banks were not initially permitted to carry out banking operations for households or foreign exchange operations. The Foreign Trade Bank handled foreign-currency exchange and countertrade. It also provided short-term import and export credits and loans geared toward expanding exports.

Since 1989, the commercial banks have carried out services for households, but because of the lack of a widespread branch network, their main activity is issuing Certificates of Deposit.

Since the reforms, joint ventures with a foreign share have played a complimentary role in the domestic system. There are three major players in this field:

- The Central European International Bank – Founded in 1979, CIB was the first offshore bank in a Comecon country and the first joint venture in Hungary in which Western partners took a majority stake. The Hungarian National Bank held a 34% share, and 6 Western banks each held 11% shares.
- Citibank Budapest – was a joint venture of Citibank Overseas Investment Corporation and the Central Wechselund Creditbank A.G. The first Western bank permitted to take direct part in commercial banking activities in Hungary. It was a full-service commercial bank that operated in Forints and convertible currencies.
- Unicbank – offered equity financing. Six Hungarian financial institutions and cooperative banks from Austria and West Germany joined with the International Finance Corporation, a subsidiary of the World Bank, to form Unicbank on January 1, 1987.

Despite provision of credit, many believe that the foreign partners have created very few spillover effects in the Hungarian market. This is a pity, given how risk averse most foreign banks have shown themselves to be.

Profit-oriented management was to be the main feature of the new commercial banking system. They therefore must consider their borrowers more carefully.

Credit Criteria:

Despite the many rounds of reform to the financial system undertaken in Hungary, bank lending decisions still remained unrelated to the past profitability or creditworthiness of the potential borrower, and the government often used the credit system to bail out enterprises operating at a loss. The credit appraisal methods were rudimentary and therefore did not create a sound basis for credit decisions. In the reforms of the late 1980's, the Hungarian National Bank issued "Guiding Principles on Credit Policy" as part of the state five-year plan.

Particularly, high spreads and an inefficient system had driven many good commercial customers to other sources of credit, such as internal funding and foreign sources. The banks did not have the option of credit worthy small risk clients with which to improve their portfolios.

The Issue of Bankruptcy:

In 1986, Hungary became the first communist country to enact a bankruptcy law. This legislation sought to encourage enterprises to become profitable, and less reliant on state subsidies, which in 1987 consumed about 23% of the national budget. Creditors, unpaid suppliers and other enterprises could initiate bankruptcy proceedings against any insolvent enterprise with the exception of agricultural collectives. The National Reorganisation and Liquidation Board oversaw the process and attempted arbitration and reorganisation before final liquidation.

Unfortunately, the government did not enforce this law vigorously. Government intervention remained so widespread that in bankruptcy proceedings unprofitable enterprises could justifiably argue that their losses were only marginally related to efficiency or managerial decisions. The government continued to compensate firms operating at a loss with subsidies, tax breaks, credits, preferential treatment in price-setting, and other means. The earnings of profit making enterprises were extracted to fund these measures. Despite the option for creditors to initiate liquidation proceedings against debtors, relatively few procedures took place. There was a deep-seated problem of ‘creditor passivity'.

As a result of general dissatisfaction with the 1986 legislation, it was amended in 1991 and came into effect in 1992. Bonin and Schaffer discuss the impact of this act in their 1995 paper. They note that its intention was to create ‘financial discipline' and counter the perceived credit passivity. Another particular worry was the problem of inter-enterprise credit and nonpayment. The legislation allowed for three types of procedure: bankruptcy proceedings affording the debtor firm temporary protection from its creditors; liquidation (or "winding-up") procedures, and "final accounting" – the cessation of activity of an economic entity without a legal successor in cases not covered by liquidation. The main innovation of the 1992 Act was the introduction of bankruptcy proceedings; it outlined a procedure whereby a debtor firm renegotiates its debts with its creditors while temporarily protected from them. The protection allowed to debtors is to give them time to formulate a restructuring plan.

Another innovation of the Act was to include an "automatic trigger" which requires that a firm with a payable of any size, that is owed to anybody and overdue by 90 days or more, must file for bankruptcy within 8 days. If the firm does not comply, the managing director is held responsible. This was the main mechanism for inaugurating ‘payment discipline'.

Liquidation arises when an insolvent firm is unable to meet the claims of its creditors and is "wound-up" under court supervision. The prioritisation of settlement is: liquidation costs; secured creditors; social security and tax debts; claims of other creditors and interest, late penalties on taxes, etc.

The inter-enterprise credit is usually represented by the value of payables in the queue, that is, payables of firms sent to the firms' banks and are waiting to be paid because the firms have insufficient funds in their accounts to cover the payables. This was perceived as a real problem and bankruptcy legislation was intended to solve it. Prior to transition, banks were obliged to operate queues, but in the early 1990's it became optional. Between the end of 1989 and the end of 1991, the queue increased from about 4% of GDP to about 7%, or from 15% of bank credit to 21%. Three main kinds of payables appear in the queue: payables to other enterprises; payables to banks; and other tax-like payables. Bonin & Schaffer conclude that this increase is less evidence of deteriorating payments discipline, rather a deterioration of tax discipline.

The banks and the enterprises applied market discipline as early as 1992 in Hungary; the government is the only possible remaining culprit supporting on-going non-economic activity, such as queuing.

The impact of the Bankruptcy Legislation:

The 90 day automatic trigger started to bite in April 1992, and the courts were inundated with bankruptcy petitions. Most cases were as a result of overdue trade credits. Between April '92 and September '93, there were about 4,300 filings. About 80% of these were believed to be as a result of the ‘automatic trigger'.

The scale of queuing did actually fall with the implementation of the Bankruptcy Act. According to a study by the National Bank of Hungary, this was due to the debtor protection afforded by the act, which meant the payables were automatically removed from the queue. In September 1993, after mounting dissatisfaction with the bankruptcy legislation, the ‘automatic trigger' was removed. This is believed to have contributed towards the fall in liquidations in late 1993.

Clearly, the banks' cash flows were hurt by the bankruptcy proceedings in that firms did not service or repay their bank debt during the 90 day protection. Also company loans that went into liquidation were non-performing for the length of the proceedings.

However, the main cost it is believed was in the enterprise sector, as firms were cut off from access to all kinds of credit. The automatic trigger had the effect of causing many firms to try and repay overdue trade credit in early 1992 so as to avoid bankruptcy proceedings. As a result both bank and trade credit fell in real terms in 1992. Unfortunately, the Bankruptcy Act did not do anything to ease the bad loan problem, if anything, it aggravated it.

Problems of Bad Loans

These loans were inherited from the system which evolved under central planning. Indeed, of the structural weaknesses of the new banking system, the concentration of loan portfolios of the three newly established commercial banks was by far the most damaging. It was a direct consequence of the lending procedures of the National Bank of Hungary which subordinated to the national economic plan before 1987.

The New Banking Act (officially Act no. LXIX of the 1991 act on Financial Institutions and Financial Institutional Activities) was promulgated on December 1 1991. This act introduced three categories of ‘problematic' loans for rating the portfolios of banks. It also called for the accumulation of loan-loss reserves against such loans. A schedule for meeting capital adequacy targets was also specified.

The State Banking Supervision in 1992 required that banks classify assets in their portfolios as ‘bad' if the borrower is in default for a year, or if the company against which the claims are held is in the midst of liquidation proceedings. Provisions equal to 100% of total ‘bad' debt had to be accumulated by the end of a three-year period. The act also legislates for two other standards of loan – ‘substandard' and ‘doubtful' with provisions of 20% and 50% to be accumulated within the same time period.

At the end of 1991, total problematic loans amounted to Ft88 bn., about 10% of total enterprise sector credit. By the end of 1992, total problematic loans had ballooned to Ft 289 bn., almost two-thirds of which was classified as ‘bad'. 1993 saw yet another ballooning of the figure.

Estimates of Bad Loans as a percentage of total bank loans

1987	1988	1990	1991	1992
0.3%	0.6%	2.6%	4.7%	12.9%

Clearly, there was a steady deterioration in the share of bank loans defined as bad. Indeed, many believe a credit market failure was imminent.

To deal with the problem of continuing bad loans, the government in 1992 introduced, rather hastily some believe, a bank consolidation scheme. In this way, the government hoped to put in place the foundations for a quick recovery to the transition- induced recession and to nurture strong sustainable growth. The policies focused on reforming a malfunctioning credit market and weaning viable large enterprises from public support through financial and operational restructuring. It focused on removing the bad-debt burden from the balance sheets of the commercial banks, and replacing it with 20 year maturity government bonds. The debts were bought by a newly created special institution, the ‘Hungary Investment Corporation'. Loans that were declared bad in 1991 sold for 50%, assets turned bad in 1992 traded at 80%. The Ministry of Finance determined eligibility for inclusion in the scheme based on a loan being classified as ‘bad' as of October 31st 1992. The institution was to issue the state consolidation bonds to cover the loans after making a minimal symbolic payment and to sell the bad loans with the proceeds returning to the state budget. There was confusion about whether the bank or the state was liable for payment at maturity. Two different financial instruments were created to replace the calculated values of removed ‘bad' loans. Series A bonds replaced the principal of the ‘bad' loans and paid interest twice annually at the average T-Bill rate of the previous six months. Interest arrears were replaced by series B bonds that paid only 50% of this return.

This scheme resulted in very little loan consolidation and workout and turned out to be "too little too late" from the perspective of recapitalisation. Despite the assertions of this scheme being a once off occurrence, the government announced plans for a second scheme the following year.

In 1993, a different system was introduced. This was an integrated Bank Recapitalisation and Loan Consolidation Program, that initially included 10 banks. Its intention was to resolve the solvency and liquidity problems of the state owned commercial banks. The major objective was to provide positive cash flows to the 3 largest commercial banks, all of which had negative projected capital adequacy ratios. The first strand was applied to the banks' balance sheets at the end of 1993, with the intention of raising the CAR of each bank to a minimum of zero. The second strand, instituted in 1994 was designed to bring each participating banks' CAR to 4% or higher by the end of May 1994.

Finally, at the end of 1994, the participating banks with CARs below 8% issued subordinated debt, which according to BIS standards is counted as Tier 2 capital, to bring their CARs (both Tier 1&2 capital) to 8%. Adherence to this 8% risk weighted capital adequacy ratio prescribed by the BIS is contained in the Act on Financial Institutions.

Loans eligible to be included in this scheme were those classified as ‘doubtful' or ‘bad' by the end of 1993. This scheme has been described as a more integrated approach than the 1992 scheme, because it specified conditions for bank participation in enterprise restructuring.

Distribution of outstanding debts of the banking system in a breakdown by risk 31/12/92

	Debt rating (HUF Billion)	Stock in Percentage
Standard	888.43	74.4
Substandard	41.1	3.4
Doubtful	98.1	8.2
Bad	166.6	14.0
Total Outstanding Debt	**1194.1**	**100.0**

Under the supervision of the Ministry of Finance, the involved commercial banks took the lead in organising and convening a creditors' committee. Debtors having loans classified as ‘doubtful' or ‘bad' by a participating bank received a letter from the bank by 28 February 1994, indicating to them their eligibility to participate. The debtor was then required to prepare a reorganisation plan and submit it to the bank, which then began the above procedure. Agreement was generally reached within 60 days. The tax law was also modified to allow for forgiveness of accumulated arrears.

In the first strand, total recapitalisation amounted to Ft. 114.4 bn. and was provided by a new issue of long term government securities. The second strand amounted to Ft17.2 bn.

There are many conceptual problems with the scheme. Bonin and Schaffer equate its role in restructuring enterprises as "frenzied feeding at the public trough". Once lists are started, companies seem to find reasons for putting themselves on it. Once on the list the companies have little incentive to get themselves off it.

They assert that the policies of the scheme are misguided. They believe, given that tax arrears are a major problem, better tax collection and discipline should have been a primary focus of the government's policy regarding enterprises. Moreover, tax forgiveness sends a very dangerous signal regarding tax discipline.

The necessary establishment of an efficient banking system justifies state intervention. However, it is important the government's actions are seen as a once-for-all occurrence, or a final operation. There is a

moral hazard problem otherwise. The consolidation was intended to clean up the banks' portfolios and encourage the preparation of the banks for privatisation. The point of the scheme was to reduce the burden on financial institutions resulting from the bad debts, and perhaps stimulate lending activities and contribute to the reduction of interest rates. This reduction in interest rates would attract a better class of customer.

Accounting Procedures

Hungarian balance sheet figures and ratios derived from them do not provide an adequate picture of the operation of the banks. If international standards had been applied, seemingly large profits would have turned into operating losses at the three banks. The Act on Accountancy terminated the total confusion in asset valuation. The incompatibility of Hungarian practices with international standards, and the non-existence of markets for various types of assets made project evaluation almost completely arbitrary, and could result in wildly differing figures on assets values.

The Act introduced Western-type accounting practices and will make Hungarian financial statements economically meaningful. However, it does not define clearly the proper correspondence between the new and old balance sheet items. As a result conversion of historical data may still yield differing results, complicating the analysis of trends.

The Hungarian Stock Exchange:

Passage of the Securities act in January 1990 made possible the opening of the Budapest Stock Exchange within a regulated framework. Investors' warm feeling towards Hungary at the time created intensive buying fever. The country had held elections bringing a new government and the economy, on the verge of privatisation, was a promising target for investment, which was reinforced by the opening of the stock exchange. Initially members totalled only 42, most of which were joint ventures with Hungarian firms, including Citibank Budapest. The rules of the stock exchange do not prohibit any firm from being wholly founded with foreign ownership. Firms must be registered in Hungary.

Hungary created a stock market believing that an under-developed market was better than none at all, and would help in the process of development towards a market economy. Another reason was to encourage foreign investment. This investment, it was hoped, would bring expertise in market techniques, efficiency and competition. The stock market would act as an incentive to be profitable, to force competition on firms and eventually list these privatised firms on the exchange.

The first company to attempt privatisation on the stock exchange was the country's largest travel agency IBUSZ, and was largely successful. The majority of listed companies were weak and small, some having since gone bankrupt. From the summer of 1991, the BSE found itself in an unstable environment of neighbouring countries. The August coup against Gorbachev in Moscow was the first warning, as foreign investors were overcome by panic to get rid of Hungarian securities. Later, the Yugoslavian conflict projected a multi-directional and permanent view of instability in the region. By the end of 1991 shares were no competition for safe bank deposits offering high interest rates. In 1992, no new shares were listed and for almost a year turnover shrank significantly. The stock exchange pursued intensive lobbying activity for tax havens to stimulate investment. Consequently, regulations appeared according to which the first buyers of shares from an initial public offering could reduce their tax base by the value of their share investment by up to 30% of income, and if they held shares for three years the benefit became permanent. The Budapest stock exchange reacted in these circumstances as most established market economy exchanges would, with the exception that there was even more structural instability.

Conclusion

As stated, banking regulation in Hungary enacted in 1991 did a lot to aggravate the problem of bad debts, the more serious of the weaknesses in the financial system. It seems the instruments available in most market economies are in evidence in Hungary. However, it will take some time before they are used in the same manner as they would be in a market economy. A change in sentiment regarding such measures and enforcement of regulation by the government will be required. Hungary, of all the former centrally planned economies, is the one where reforms are most advanced. Indeed, *The Economist* praises the actions taken by Hungary for making wise decisions, forcing banks to confront their bad loans, and selling banks to foreign

strategic investors. This attracted the capital and professional skills the country needed. As a result, almost half the banks are in foreign hands; and bad loans have fallen.

For transition economies in general, bank solvency and privatisation should be a priority, so that bad credit allocation does not spoil the chances of recovery after stabilisation. It is also true that the problem of regulatory framework does not seem to be the regulations themselves but their enforcement, partly due to the unresolved questions of responsibility for supervision. Most of the economies undertaking transition did so under extreme international pressure. Policy makers in the process were also 'blind' in their endeavour, and so the effects of any given action were not known until it was actually implemented, usually creating yet more problems.

The complexity of the problem faced should therefore be obvious. As there is no template for any such economy, it will probably continue to be a process of trial and error. I believe the priority should be given to nurturing creditworthy customers, it is just a matter of how.

Bibliography

Abel, I., P.L. Siklos, and L.P. Szekely (1998) *Money and Finance in the Transition to a Market. Economy.* Edward Elgar Publishing: USA.

Bonin, John P. (1998) *Banking in Transition Economies*. Edward Elgar Publishing: USA.

Bonin, John P. and Mark E. Schaffer (1995) "Banks, Firms, Bad Debts and Bankruptcy in Hungary 1991-94" in *Centre for Economic Performance* paper no. 234 April 1995.

Catte, P and C. Mastropasqua (1993) "Financial Structure and Reforms in Central and Eastern Europe in the 1980's" in *Journal of Banking and Finance* 17 (5), p. 771-1078.

Corner, K.J. (1992) "Development of Capital and Financial Markets in Hungary" in D. Gowland *Finance in Eastern Europe.* Aldershot: Dartmouth.

The Economist (12/12/98) "Reversal of Fortune".

Estrin, S., P. Hare and M. Surony (1992) "Banking in Transition: Development and Current Problems in Hungary", *Centre for Economic Performance* 68.

Griffith-Jones S. and E.V.K. Fitzgerald (1995) "Financial Sector Development in Central and Eastern Europe: Conclusions", in Griffith-Jones, S. and Z. Drabek. *Financial Reform in Central and Eastern Europe*. St Martins Press: New York.

Gros, D. and A. Steinherr (1996*) Winds of Change: Economic Transition in Central and Eastern Europe*. Harlow: Longman.

Hungary on the Mark (October 1995), Stock Exchange Story.

Ligeti, Dr Sandor (1991), "Banking Reform in Hungary 1987-1990*", Research Papers in Banking and Finance* RP 91/7, Institute of European Finance, University of North Wales.

Mizsei, K. (1993) "Hungary: Gradualism Needs a Strategy" in Portes, R. *Economic Transformation in Central Europe: a Progress Report*, European Community.

Nyers, R. and G. R. Lutz (1995) "Development of the Financial Sector in Hungary During the Transition Period" in Griffith-Jones, S. and Z. Drabek *Financial Reform in Central and Eastern Europe*. St Martins Press: New York.

Where Does Development Aid Go?

Jasper Grosskurth – Socrates

Overseas aid and debt are at the heart of all discussions of the economies of Less Developed Countries. In this essay, Jasper Grosskurth uses econometric methods to examine what determines the level of aid granted to any particular country and also looks at some of the political motivations behind this contentious question.

The Arguments about Aid

In recent years the more industrialised countries (except the US) have restated the goal to bring the level of official development aid (ODA) to 0.7 per cent of their GNP. During the same time there has been much criticism about the distribution of ODA and the intentions behind it. This paper examines four important characteristics of recipients of development aid that might shed some light on the reasons why ODA is granted and what the intentions behind it are.

The official argument for granting ODA is to stimulate development and to eradicate poverty. It is argued that aid is invested for the immediate and future benefit of the recipients. Optimally, an upward economic spiral with rising levels of investment and income would result. Critics doubt these altruistic motives. They claim that aid is often given in order to facilitate loan repayments. This argument is supported by the fact that in 1994 alone less developed countries (LDCs) paid $169 billion off their $1,921 billion debt while receiving $56.7 billion in aid. These streams of capital clearly do not allow any aid to be invested. Thus, ODA is argued to be an indirect subsidy to the lending agents and causes little relief for LDCs. Another critical argument in this discussion is that aid is (mis)used as a way to strengthen military alliances by allowing financially weak countries to buy military equipment.

Outlining the Model

The dependent variable of a model suitably designed to empirically test the significance of these arguments must be the amount of ODA received. Possible explanatory variables include GNP per capita and the Human Development Index (HDI) as measures of poverty and development. The levels of external debt and of military spending as shares of GNP seem fit to test the arguments of the critics of ODA. *A priori*, one would expect HDI and GNP to have a negative influence on the amount of ODA, as richer countries need less financial support. Critics of ODA as a means of poverty relief would expect a positive influence of the level of external debt and the amount of military expenditures. In order to keep the model convenient and within the bounds of this paper the proposed model uses cross-sectional data. This choice is justifiable under the assumption that none of the variables involved are subject to high volatility over a few years across a larger set of countries. Pooled data would produce marginal extra precision at the cost of higher complexity.

Data

The year 1994 was chosen as base year for the estimation as it is the most recent year for which comprehensive data is readily available. The dependent variable ‘aid’ is measured as the amount of ODA in US$ given to a given country in 1994 as a share of its GNP in per cent. ODA consists of loans granted by the World Bank, the IMF and other official agencies from the OECD and OPEC countries. GNP per capita is measured in US$. The HDI is an index compiled of several indicators of development including, among others, life expectancy, literacy and income. It takes a value between 0 and 1. The level of external debt as a share of GNP is measured as a ratio. It is calculated by dividing the amount of external debt per capita in US$ by GNP per

capita as above. The level of military expenditure is measured as a share of GNP in per cent. It is likely to be underestimated for strategic and political reasons. The set of data includes seventy LDCs selected on the basis of data availability. All sources are generally acknowledged sources of international data. However, internationally aggregated data can not be better than the sum of national data sets.

The data may suffer from a selection bias as it could be argued that countries that receive development aid are often tied to report national data to international agencies. A higher dependency on aid would then result in a higher likelihood of inclusion in the study. The set of data obtained also suffers from multicollinearity. The exogenous variables 'hdi' and 'gnp' are highly correlated (Pearson correlation: 0.748). This is partly due to the fact that income is a component of the HDI. As a result of this the significance of the coefficients for 'hdi' and 'gnp' are likely to be underestimated.

Formulating the Model

The following model results from the considerations above:

$$aid = a + b_1\, hdi + b_2\, gnp + b_3\, debt + b_4\, military + u \quad (1)$$

where '*u*' is the error-term.

The null hypothesis is:

$$b_1 = b_2 = b_3 = b_4 = 0 \quad (2)$$

The alternative hypothesis is that the null hypothesis is not true, and therefore the model has explanatory power.

Results

After a test-run, Sierra Leone was excluded from the sample. Its high level of aid received ('aid'=164.4% of GNP) strongly biased the regression. No satisfactory reason was found for the exceptionally high level of aid received. The exclusion of Sierra Leone significantly increased the explanatory power of the model, as captured by higher values of the 'R-squared' (adjusted) and 'F' statistics. The F-value more than doubled. No sign changes took place.

Table 1 summarises the adjusted regression output. The null hypothesis may be rejected at the 0.1% level (F= 22.41). The explanatory power of the model is moderate (adjusted R-squared= 55.7%). The coefficients of the variables 'hdi', 'debt' and 'military' exhibit the expected orientation.

Table 1. Summary of Main Regression Output

Aid = 22.1 – 41.0 hdi + 0.00174 gnp + 4.58 debt + 1.24 military

Predictor	Coefficient	t-Ratio (p value)
Constant	22.066	5.33 (0.000)
Hdi	-40.995	-5.42 (0.000)
Gnp	0.0017369	1.76 (0.084)

Debt	4.575	4.55 (0.000)	
Military	1.2408	2.13 (0.037)	
F = 22.41	R-sq. = 58.3%	R-sq. (adj.) = 55.7	F = 22.41

The intercept value of 22.1 suggests a high level of aid being granted. However, the negative coefficient of 'hdi' (-41.0) is relatively large. The debt coefficient of 4.5 has to be seen in relation to an average level of debt of 1.02 times GNP. This makes the impact of debt on the level of aid received rather small compared to the HDI. The average level of military expenditures (2.67) has on average even less influence, with a coefficient of 1.2.

Against prior expectations the coefficient for 'gnp' is positive. It is, however, very small (0.0017). Even the high average GNP of 1300.9 does not help GNP to overcome the status of the least influential variable with an average impact of 2.6 percentage points on aid. With a t-value of 1.76 (p=0.084) it is also the least significant variable. The variables 'hdi' and 'debt' are significant at the 0.1% level (t_{hdi}= -5.42; t_{debt}= 4.55). The variable 'military' is significant at the 5% level with a t-value of 2.13.

Applying White's general heteroskedasticity test, the null hypothesis of no heteroskedasticity may be rejected at the 0.05% level. This significantly exceeds the relevant critical value of 31.32 at p=0.005. The Spearman rank correlation test suggests heteroskedasticity in the variables 'hdi' (t-value of the Spearman rank test = -2.97), 'gnp' (-3.96) and 'debt' (4.59). Thus, the value for the standard deviation and consequently, the t-ratios and the significance levels of the respective variables are biased. The size and the direction of the bias depend mainly on the exact relationship between the true values of the observed variable and the true variance.

There are several potential causes of the heteroskedasticity. The low R^2 of model (1) suggests that an important variable might be omitted. Possible omitted variables include variables capturing the political situation, the occurrence of natural disasters and the degree of dependency on foreign trade. Another potential cause is outliers that strongly bias the regression. Mozambique is a likely candidate. However, the exclusion of Mozambique from the sample would only marginally reduce the level of heteroskedasticity.

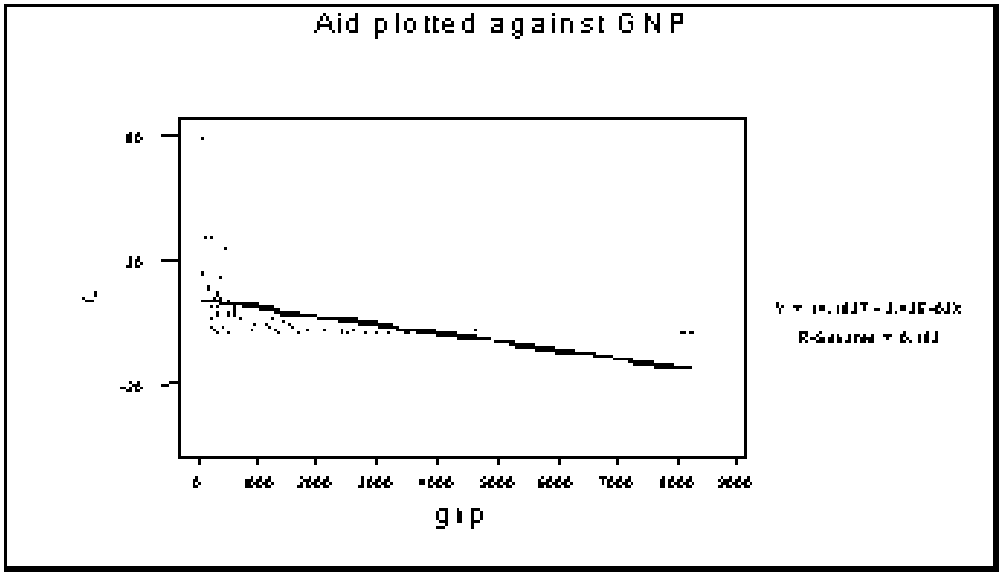
A closer look at the suspected relationship between the observed variable and its residual may help to transform the data in order to reduce the level of heteroskedasticity. This is, however, beyond the scope of this paper.

A Closer Look At The Explanatory Variables

In order to further examine the properties of the four explanatory variables each of them was individually used as regressor against 'aid'. The coefficient of 'hdi' has very high explanatory power (R^2(adj)= 39.5%). The 'hdi'-model is very significant with an impressive F-value of 45.4%. Its coefficient slightly decreases, but it is still the single most useful variable to explain the amount of aid received.

The coefficient for 'gnp' changes its orientation and is now negative. This makes 'gnp' the most unreliable variable of the model. The R^2(adj) of 17.1% is disappointing, even though the model and the coefficient are significant at the 1% level. A look at Figure 1 suggests that the influence of 'gnp' on 'aid' might be more significant below a threshold level of roughly $1800 per capita. In order to check this, a Chow test was applied to test the alternative hypothesis that there is a structural change in the aid-GNP relationship at a level of $1800.

Figure 1



The null hypothesis that there is no structural change may be rejected at the 1% level. The F-value of 9.87 is significantly larger than the critical value of 4.98. For the set of 16 rich countries 'gnp' is not significant at the 10% level (p=0.158). For the 53 countries with a GNP smaller than $1800 the variable 'gnp' is significant at the 0.1% level. Its coefficient increases significantly to a value of -0.015. The rationale behind this characteristic might be that richer countries only get aid under exceptional circumstances. These might for example be political reasons (as in the case of South Korea) or the occurrence of natural disasters like earthquakes and hurricanes.

The regressor 'debt' is again highly significant while exhibiting an R^2(adj) of 28.0%. However, this variable should be interpreted with care. As ODA consists mostly of loans it would be logical to assume that the relationship is two-fold. A Hausmann specification test was applied to test the null hypothesis that there is no simultaneity problem concerning 'aid' and 'debt'. The null hypothesis may be rejected at the 0.1% significance level. The consequence of this is that the estimated parameters are biased and not consistent. A simultaneous equation method of estimation would be more appropriate to estimate the relationships at hand.

The amount of military expenditure does not have large explanatory power (R^2(adj)=5.3%). However, both the restricted model and the coefficient of the variable 'military' are significant at the 5% level. The low explanatory power might be due to the low number of strategically important LDCs. It would be interesting to check the parameters of this variable during the height of the cold war.

Directives for Political Decisions

In order to assess the political consequences, let us for the time being assume that the results of the main regression in table 1 are generally confirmed by further studies that overcome the errors and biases of this study. According to the evidence presented it seems likely that the amount of ODA increases with decreasing levels of development. This is in support of the argument that development aid is granted to less developed countries.

However, it is highly ironic that the main measure of monetary wealth (i.e. GNP) has relatively little explanatory power when it comes to the distribution of monetary transfer to LDCs. It seems that the donors of aid rely on the belief that loans provide solutions even if the problem is not one of too little wealth. Development seems not to be a matter of wealth alone. From the study above one would conclude that the role of GNP is generally overestimated. There should be more emphasis on how to efficiently

organize resources (including aid).

The level of external debt seems to be an important factor. After all, debt is the one problem that can definitely be solved with money. However, given the current crisis in Brazil it is not at all clear that loans can stimulate development in the long-run. The argument that a bankruptcy process for countries would be highly beneficial to development should receive more attention in this context. The altruistic argument for ODA may very well be questioned. It is in this light that ongoing campaigns for debt relief as a means to achieve long-term economic development should be viewed with some sympathy.

The influence of the amount of military spending is hard to establish as the data for this variable is not very reliable. It generally consists of outliers where large military expenditures coincide with large amounts of aid. Thus, it is hard to draw general conclusions concerning this factor. A deeper analysis of the properties of the outliers would probably shed some light on the issue.

Fields for Further Research

On the basis of the suggestive results of this study, more research is needed. The model will have to be extended to include likely omitted variables. It will then have to be formulated in a way that overcomes the simultaneous equation problem. At the same time the model should be extended to include pooled data in order to pick up the development of trends and lagged variables. Further research into the explanatory variables themselves is also necessary. In particular, the relationship between the level of aid and the external debt would have to be clearly formulated. A detailed study might also include an analysis of the budget allocations of aid recipients. It would be interesting to take a closer look at possible structural budgetary spending patterns. If the critical arguments empirically outweigh the arguments in support of ODA, the main focus of future research must be on how to help LDCs to embark on sustainable and long-term paths of economic growth.

Bibliography

Institudo del Tercer Mundo (1997) *The World Guide 1997/98*. New Internationalist: Oxford.

Industrialisation In India

Jana Hambrock and Sebastian Hauptmann - Socrates

The development of India into a modern industrialised country is a slow but continuing process. Jana Hambrock and Sebastian Hauptmann provide a detailed analysis of the Indian economy, referring to its historical and theoretical context, as well as to its future prospects.

Introduction

To discuss the topic "The Indian approach to industrialisation", this essay is divided into several parts. Firstly, the reasons for, and policies of industrialisation are discussed. The theoretical framework is finished by identifying indicators to be used in the evaluation of the success of such policies. The second section gives a rough overview of the development of industrialisation in India since independence. The third section goes into more detail and provides information about some specific and important areas for industrialisation. The fourth section uses the defined indicators to measure the success of India's two main approaches to industrialisation and evaluates the results. The fifth section describes the main problems India faces today and in the future. Last but not least, the sixth section informs about current trends in Indian policy.

Theoretical Framework for Industrialisation

Before analysing the Indian approach, we want to introduce the aims of industrialisation, give a rough overview of the industrialisation strategies for Less Developed Countries (LDCs) and identify indicators for the evaluation of the success of industrialisation policies.

Why Industrialisation?

What are the ultimate objectives of economic development? Different governments may have different objectives in mind. Generally, however, they will include a faster growth of national income, alleviation of poverty, and reduction of income inequalities.

But how is industrialisation expected to contribute to these goals? The experience of industrial economies shows a close association between development and industrial expansion. But industry is also thought to provide certain spillovers which would benefit other activities: enhancement of skills, training of managers, dispersion of technology, etc. Moreover, pessimism about the prospects of food and raw materials made the substitution of domestic for imported manufactured goods seem the most promising route to development for many countries.

Industrialisation and foreign trade

Economists and policymakers in the developing countries have long agreed on the role of government in providing infrastructure and maintaining stable macroeconomic policies. But they have disagreed on policies toward trade and industry. The form of government intervention in this area is the distinguishing feature of alternative development strategies.

A convenient and instructive way to approach the complex issues of appropriate trade policies for development is to set these specific policies in the context of a broader

Less Developed Countries strategy of looking outward or inward. Outward-looking development policies encourage not only free trade but also the free movement of capital, workers, enterprises, the multinational enterprise, and an open system of communications. By contrast, inward-looking development policies stress the need for LDCs to evolve their own styles of development and to control their own destiny. Within these two broad philosophical approaches to development, a lively debate has been carried out between the free traders, who advocate outward-looking export promotion strategies of industrialisation, and the protectionists, who are proponents of inward-looking import substitution strategies .

The advocates of import substitution (IS) – the protectionists – believe that LDCs should substitute domestic production of previously imported simple consumer goods and extend this later to a wider range of more sophisticated manufactured items – all behind the protection of high tariffs and quotas on imports. In the long run, IS advocates cite the benefits of greater domestic industrial diversification and the ultimate ability to export previously protected manufactured goods, as economies of scale, low labour costs, and the positive externalities of learning by doing cause domestic prices to become more competitive with world prices.

By contrast, advocates of export promotion (EP) of both primary and manufactured goods cite the efficiency and growth benefits of free trade and competition, the importance of substituting large world markets for narrow domestic markets, the distorting price and cost effects of protection, and the tremendous success of the East Asian export-oriented economies of South Korea, Singapore, and Hong Kong .

The balance of the debate has swung back and forth, with the protectionists predominating in the 1950s and 1960s, and the export promoters gaining the upper hand in the late 1970s and in the 1980s and 1990s, especially among Western and World Bank economists.

Indicators for measuring economic development

Of course, any development policy has to be assessed by measuring the economic development it effects. India’s first Prime Minister Jawaharlal Nehru declared on the eve of the departure of the British, on 14 August 1947, that India’s task in the future included "the ending of poverty and ignorance and disease and inequality of opportunity".

These measures will be used to determine the success of the inward-looking policies he initiated, as well as to compare their success with the success of the reform policies. Therefore, growth of income per capita, alleviation of poverty and reduction of income inequalities are amongst the most important indicators.

To measure advances regarding inequality of opportunity and ignorance, several indicators pertaining to education and health will be used. These are two important public goods to which every individual is entitled; both for their intrinsic importance and for their enhancement of instrumental personal, social and process roles, and also empowerment and distributive roles.

History of Industrialisation in India

This section gives a rough overview of the history of industrialisation in India. Several areas will be discussed in more detail in the following section.

Colonial rule

Under colonial rule, India, as with most other developing countries, followed a non-industrial model. But many Indians believed that progress was retarded by this. It was believed that true economic progress lay in industrialisation; Smith’s and Ricardo’s ideas of international specialisation and mutually advantageous free trade

were rejected, at least until India became an exporter of more sophisticated goods.

Industrialisation since Independence

India's first Prime Minister, Jawaharlal Nehru, Premier from 1947 to 1964, saw industrialisation as the key to alleviating poverty. Industrialisation not only promised self-sufficiency for his nation that had just regained political sovereignty, but also offered external economies accruing from technical progress. Believing the potential of agriculture and exports to be limited, Indian governments taxed agriculture by skewing the terms of trade against it and emphasising import substitution, thus giving priority to heavy industry.

Nehru believed a powerful state with a centralised planned economy to be essential if the country was to industrialise rapidly. The Industries (Development and Regulation) Act (IDRA) in 1951 laid the foundations for this administrative control on industrial capacity. But, over time, the licensing requirements became increasingly stringent and were accompanied by a gamut of procedures that required clearance by a number of disparate and uncoordinated ministries.

In order to pursue IS, the Import Trade Control Order of 1955 subjected almost all imports to quantitative restrictions in the form of import licenses. These were supplemented by tariffs at rates that were among the highest in the developing world.

Indian state intervention in industrial development has been extensive. Unlike many East Asian countries, which used state intervention to build strong private sector industries, India opted for state control over key industries. At different times, nationalised industries included chemicals, electric power, steel, transportation, life insurance, portions of the coal and textile industries, and banking. To promote these industries the government not only levied high tariffs and imposed import restrictions, but also subsidised the nationalised firms, directed investment funds to them, and controlled both land use and many prices.

Under Prime Minister Indhira Gandhi (1966-77), two major shifts took place in the role of the state. First, the neglect of agriculture was reversed through state activism in subsidising new seeds and fertilisers, agricultural credit, and rural electrification. The green revolution took off and by the mid-1970s India was self-sufficient in grain. The second shift was the further tightening of state control over every aspect of the economy. Banks were nationalised, trade was increasingly restricted, price controls were imposed on a wide range of products, and foreign investment was squeezed.

In 1973, dealings in foreign exchanges as well as foreign investment came to be regulated by the Foreign Exchange and Regulation Act (FERA). The act virtually shut out the inflow of new technology from abroad in the 1970s and 1980s, particularly when these involved large equity participation.

The Indian system of state planning went far beyond the usual inward-looking industrialisation policies that most developing countries pursued after World War II. The government regulated the most basic business decisions for all firms above a certain size: borrowing, investment, capacity utilisation, pricing and distribution.

The over-restrictive, and often self-defeating nature of the regulatory framework, began to become evident by the late 1960s and early 1970s. Comprehensive planning was increasingly criticised as planned targets were not met and many plans were not even implemented. The lack of success in some dimensions led to a new and more restrictive set of regulations. One example is the attempt to reserve sectors for small industries and to restrict the growth of large firms.

Beginning in the early 1980s, a mild trend towards deregulation started. Economic reforms were introduced, starting to liberalise trade, industrial and financial policies, while subsidies, tax concessions, and the depreciation of the currency improved

export incentives. These measures helped GDP growth to accelerate to over 5% per year during the 1980s, compared to 3.5% during the 1970s, and reduced poverty more rapidly. However India's most fundamental structural problems were only partially addressed. Tariffs continued to be among the highest in the world, and quantitative restrictions remained pervasive.

Moreover, a significant government influence continued in the allocation of credit to firms and a discouragement of foreign investment. Relatively inefficient public enterprises, controlling nearly 20% of GDP, remained a drag on economic growth.

The government expanded antipoverty schemes, especially rural employment schemes, but only a small fraction of the rising subsidies actually reached the poor. Competition between political parties drove subsidies up at every election. The resulting fiscal deficits (8.4% of GDP in 1985) contributed to a rising current account deficit. India's foreign exchange reserves were virtually exhausted by mid-1991 when a new government headed by Narasimha Rao came to power.

In July 1991, India launched a second major economic reform program. The government committed itself to promoting a competitive economy that would be open to trade and foreign investment. Measures were introduced to reduce the government's influence in corporate investment decisions. Much of the industrial-licensing system was dismantled, and areas once closed to the private sector were opened up. These included electricity generation, areas of the oil industry, heavy industry, air transport, roads and some telecommunications. Foreign investment was suddenly welcomed.

Greater global integration was encouraged with a significant reduction in the use of import licenses and tariffs (down to 150% from 400%), an elimination of subsidies for exports, and the introduction of a foreign-exchange market. Since April 1992, there has been no need to obtain any license or permit to carry out import-export trade. As of April 1, 1993, trade is completely free, barring only a small list of imports and exports that are either regulated or banned. The WTO estimated an average import tariff of 71% in 1993 which has been reduced to 40% in 1995. With successive additional monetary reforms, the rupee, since 1995, can nearly be considered a fully convertible currency at market rates. India now has a much more open economy.

Special areas of economic policy

After giving a rough overview of the history of industrialisation, this chapter provides more detailed information about the areas of human factors for industrialisation, structure of foreign investment, and the process of privatisation.

Human Factors for industrialisation

A very necessary ingredient for promoting industrialisation and technological change is the investment in human capital. India's current average adult literacy rate is low at 52%. There are large inequalities between males (literacy: 64%) and females (literacy: 39%), between urban and rural areas, and between different social classes. Low levels of female education in India are due to the gender division of labour. Females are expected to spend most of their life in domestic work and child rearing. Secondly, the practice of dowry and the ideology of hypergamous marriage can turn female education into a liability. An educated girl is likely to be more expensive to marry off, thus female education tends to be a threat to the social order. Illiteracy is widespread not only in older groups, but also among young boys and girls, particularly in rural areas.

The remarkable neglect of elementary education in India is all the more striking given the widespread recognition, in the contemporary world, of the importance of basic education for economic development. Primary education in India is not compulsory. However those who receive primary education and make it through secondary school

have an excellent chance of getting a high-class University education. India has a huge supply of people with more education than they can use.

Amartya Sen argued that there were deep-seated class biases in the pressures that have determined Indian educational priorities, and that the inequalities in education are, in fact, a reflection of the inequalities of economic and social powers of different groups in India. India's hierarchical, brahmin-dominated society has been noticeably casual about primary education; resources have been poured into the higher education that benefits the upper class.

The persistence of endemic illiteracy and educational background in India generally limits the freedom and well-being of the Indian masses and has a direct role in the relative deprivation of women in particular. Elementary education is extremely important for a successful integration in the world market and if the process of growth were more 'participatory' it could raise the income-earning power of large parts of the nation. Even if India's high technology industries, such as modern computer software or engineering products had an accelerated growth, the bulk of the Indian population would benefit only marginally.

Foreign Investment Policy Instruments

Since independence, new foreign investment has been rigidly controlled in line with established development thinking. Investment was mostly restricted to industries where it was felt that the acquisition of foreign technology was important, or where the promise of exports was convincing. The FERA was a landmark. In most industries, foreign shareholdings in rupee companies had to be reduced to 40%. The relative importance of foreign ownership in the private corporate sector fell significantly in the next decades. The attitude towards foreign investment began to change in 1985 as a part of Ghandi's drive for advanced technology. Despite this, looking at 1988 shows how poorly India fared in attracting private foreign investment. Net Private Foreign Investment to India (in million US$) was $280. This is compared to her Asian competitors with figures of $2344 (China), $1093 (Thailand) and $986 (Philippines).

Since the liberalisation in, mid-1991 India has become a magnet for foreign investment. A noteworthy feature is the dramatic speed of approvals, some taking only a week. Automatic approval of projects in 34 industrial sectors is permitted. The constraint that foreign investment should reach only 40% was relaxed to 51%. In certain sectors, such as infrastructure and computer software, the ownership can also be as high as 74%. In some sectors such as transport infrastructure, full foreign ownership is permitted and even encouraged.

Foreign direct investment rose from $170 million in 1991-92 to $1.3 billion in 1994-95. India is targeting foreign direct investment of at least $10 billion annually by the turn of the century. It attracted a total of $2.4 billion in 1996-97 and $3.4 billion in 1997-98. Foreign direct investment is nearly 25 times higher than it was before the economy was liberalised.

The government in New Delhi is continuing to work toward reforming long-standing policies to make the country more "investor friendly"; a move that continues to heighten US interest in the country. A growing number of US companies, motivated by an increasingly favourable investment climate and the country's huge reserves of both human and natural resources, have seriously begun to consider investing there. US investment has been more than 24% of the total investment since 1991. In 1995 approximately $3.5 billion of US foreign investment flowed into India.

The US continues to be the leading investor in India. The US is followed by other more 'traditional' investors like the U.K. (6.4%), Israel (5.9%), Mauritius (4.6%), Japan (4.2%) and Germany (4.1%). Most of the investment interest has been in the telecommunications, oil refining, automobile and transportation sectors, with other projects developing in the electronics, software and electrical equipment industries.

Revitalisation of the Indian Private Sector

India has always been a trading nation. Centuries of alien rule and decades of socialism did not stamp out the Indian entrepreneurial spirit. The Statement of Industrial Policy 1991 reduced the list of industries reserved for the public sector from 17 to 6. In 1992/93, 104 out of a total of 237 central public sector enterprises made losses. With few exceptions, the inefficiency of public enterprises, which generate 17% of GDP, has continued to be a serious issue. It is clear that there is a *prima facie* case for privatisation on grounds of efficiency. However, the strength of the case for privatisation varies with the type of industry.

Now exposed to international competition, Indian companies are forming alliances with each other to face the challenges of the future. It is now even possible for Indian firms to merge with other companies. Procter & Gamble merged its operations with Godrej Soaps. Coca Cola acquired Parle, its erstwhile competitor, thus extending the cola wars to new exotic lands. Companies are enjoying the benefits of economies of scale and synergy. As larger and stronger groups emerge, they will have the resources necessary to invest in upgrading technology and will become more competitive.

Evaluation of Industrialisation in India

The indicators named above will be used to evaluate the success of Indian industrialisation policies. A distinction will be made between the period from Independence until 1980, characterised by inward-looking policies such as IS, and the period from 1980 until today, characterised by reforms and the opening up of the Indian economy. The following analysis with indicators compares the achievements of these two periods only. Absolute statements of Indian achievements follow later on.

It must be emphasised that the analysed data conceals sharp disparities within India between development-oriented states and laggards, between women and men, between adults and children, and between city and countryside. Different states have progressed at differing paces and, even within states, different regions have achieved markedly varied results. Even more noticeable than geographic differences in poverty reduction are the inequalities that persist across gender, caste and ethnic groups. Social indicators for women – literacy, for example – are distinctly lower than for men, and the level of scheduled castes and tribes in both economic and social achievements is still well below the national average.

Growth of national income

Growth of national income in GNP per capita in India was about 1.4% in the years from 1960 to 1980. The effects of the reforms of the 1980s are reflected in growth figures: the average GNP per capita growth increased to 3.25%. And with further opening up in the 1990s, the GNP per capita reaches new heights with 3.8% average growth in the period from 1987 to 1997.

Alleviation of poverty

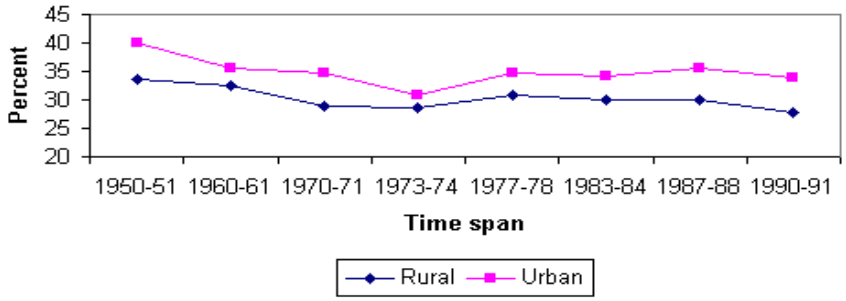
In the early 1950s, about half of India's population was living in poverty. Since then, poverty has been declining slowly. The poverty reduction was given new impetus by the reforms: falling from around 55% in 1974 to just under 35% in 1994 by a headcount index. In the 1980s and 1990s, poverty reached historically low levels. Still, because of India's rapid population growth rate, the relative reduction of poverty has not been sufficient to reduce the absolute number of poor which increased from about 164 million in 1951 to 312 million in 1993-94.

Reduction of income inequalities

The reduction of income inequalities has only made slight advances. The biggest

advances were made mostly before the reforms. On the other hand, one of the biggest increases in inequality happened in the late 1970s, and the developments for the late 1980s / early 1990s in Figure 1 look promising. Compared to other low-income economies, the inequality is relatively low.

Figure 1: Gini coefficient of per-capita consumer expenditure



Education

From 1960 to 1977 the reduction of illiteracy was only 11%. From 1978 to 1995, it was 25%, thus much higher. Of course, there are also long-term developments involved here, so that the higher reduction in the second period might be partially due to actions taken in the first period.

Health

Life expectancy, used as an indicator of health, has increased constantly since independence. During the period from 1960 to 1980, it increased from 43 years to 52 years, which is an increase of 21% in 20 years. From 1980 to 1995 it grew to 62 years, which is a 19% increase in only 15 years. This means that the growth of this indicator has increased by a rate of 24% compared to the previous period.

Even clearer is the improvement in the reduction of infant mortality. This was reduced by 25% in the period 1960 to 1995 and a further reduction of 45% took place from 1980 to 1995. This is partially due to better education of mothers, as well as to an improved economic situation of parents.

Summary

Independence - 1980

The system of state planning constrained growth of the private sector by allowing it to expand only with government permission. But despite the massive interventions, economic progress was made during the period following independence. The per capita GDP grew at a respectable rate of 1.4% per annum from the late 1940s into the 1970s. Both famine and poverty were significantly reduced during this period. Nevertheless, most economists argued that the interventions lowered India's economic growth rates to a level which was not adequate for a country that saved and invested over one-fifth of its GDP. With few major producers of many key industrial products, the concentration of domestic production was very high, inviting monopolistic pricing. Moreover, as the world economy grew and as beneficial opportunities for growth through trade expanded, India paid an increasing price for its economic isolation.

The Indian system of state planning has been described as combining "the worst of socialism and capitalism, by suppressing growth while failing even to deliver the social welfare that communist systems provided".

1980 – mid-1990s

The liberalisation that started in the 1980s and gained further momentum in mid-1991 proved the critics of the old system right.

Per capita GNP reached historically high growth rates; industrial output-growth averaged 8.4% in 1994-95; exports were up by 27%; inflation dropped below 10%; the current account deficit is below 1% of GDP; foreign-exchange reserves are high at $20 billion; and food stocks have hit an all-time high of 37m tonnes.

The long neglected private sector today generates two-thirds of India's GDP. The World Bank describes the change of the state's role from that of principal investor to that of facilitator of entrepreneurship. Thus, over the course of a few years, the old national consensus on socialism has given way to a new consensus on liberalisation.

India – a perspective

It should not be forgotten, that despite all mentioned advances, India is still a low-income, developing country. It has an economy slightly smaller than Belgium's with a GNP per capita of $390. Only about half of its 960 million people can read. Only 14% of the population has access to clean sanitation - a lower proportion than anywhere else except for parts of Sudan and Burkina Faso. According to the World Bank, 63% of India's under-five-year olds are malnourished. The infant mortality rates of two Indian states is above the sub-Saharan average. About 40% of the world's desperately poor live in India.

India's progress in fighting poverty is modest when compared with some of its Asian neighbours. Between 1970 and 1993, the proportion of Indonesia's population living in poverty dropped from 58% to 8% – a greater decline in a shorter period of time. According to the World Bank,

> "*it is through rapid growth that India will be able to reduce poverty and generate the resources to invest in the health and education of its people who will in turn sustain this growth, [as] overall growth accounted for the lion's share of poverty reduction: 80% of the decline in the number of households below the poverty line between 1951 and 1970, and almost 100% since 1970*".

But India, like many developing countries that adopted a philosophy of government intervention with import substitution policies, is finding that economic reform can often be a slow, incremental process. Complications continue. Domestic producers will resist tariff reductions that subject them to increased competition. Government bureaucrats will try to maintain the power and influence they acquired during periods of substantial government involvement in economic decision making. The reforms so far are a positive step but must be extended and accelerated if India is to catch up with the East Asian tigers.

It is not possible to condemn the inward-looking policies as totally wrong. Some advances were made and no one can say what would have happened if India had followed another strategy. In our opinion, the idea that industrialisation was important for India in the 1950s was right, as the share of commodities in world trade is constantly decreasing. However, the view that exports are not important and that India could go its own way was wrong. By protectionism and interventions, India fostered the establishment of industries. India didn't create an efficient private sector but a huge, inefficient public sector, and protectionism lowered the competitiveness of India's economy. Furthermore, the neglect of exports led to the fact that India's share of world trade decreased from 2% in 1950 to 0.5% in 1990.

In our opinion, India should have followed an EP-strategy as the Asian tigers did and shouldn't have created the system of state planning and such a large public sector; both of which led to huge inefficiencies. The success of the recent opening up of the

economy illustrates the potential India has. Therefore, India should proceed in this direction to encourage further economic growth.

Still, economic growth alone is not enough. Amartya Sen emphasises that growth must be "high and participatory". But even today, India's "have-nots are treated virtually as are-nots" due to the caste-system and are neglected. Sen toured India in January 1999 to communicate his message that Indians are woefully underfed, undereducated and sickly, even by the standards of poor countries. The impact remains to be seen. India's biggest current problems will be covered in the following section.'

India's current problems regarding industrialisation

After evaluating important indicators for industrialisation and giving a summary of industrialisation since independence, we will now take a more detailed look at some specific areas for future industrial development in India.

Infrastructure

Perhaps the biggest problem for doing business in India is the woeful state of its infrastructure. Consider this: it takes four days for a truck to travel the 900 miles between India's national capital New Delhi and its commercial capital Bombay. It takes months to get connected to the power supply in any Indian city, and several years to get a telephone connection in large cities.

Poor infrastructure is acting as a drag on the Indian economy, and the Indian government is now attracting private domestic and foreign investment to build the backbone of a modern economy. A recent report estimated that investment in infrastructure would rise from 5.5% of GDP in 1997, to about 7% in 2000/01. This includes massive improvements in telecommunications, power, energy, and transport.

India has recognised the vital role telecommunications play in the growth of the economy. The Indian telecom sector was wholly under government ownership and control until recently and was characterised by under-investment and outdated equipment. There is vast potential for extending these services in India, which has one of the world's smallest telephone densities of 1.3 per 100 people, compared with the world average of 10 per 100. Advanced communication services such as fax, data transmission, and leased circuits are becoming increasingly common. Foreign collaboration is also being encouraged in cellular phones and paging systems. In the telecommunications sector, estimates for regional investment needs range from $40 billion a year, to as high as $70 billion a year by the end of the century.

The power problems are severe in India with three-hour-a-day power cuts and damaging voltage fluctuations that require companies to generate their own power. Investment in energy is a sound way of increasing manufacturing activity. If all 49 proposed private sector power projects are implemented, these would add a total of 20,000 megawatts to India's current capacity of 66,000mW. However it should be noted that India's energy demand is growing at 8-10% a year.

As part of India's liberalisation efforts, the transportation sector has been opened to private investment. The government is offering incentives to invest $4.7 billion to construct and operate bypass roads, highways, bridges, railways, and ports.

Health and Education

HIV/AIDS is a newly emerging threat to India's public health. About 3 million people in India may be affected. Malnutrition also continues to impede India's development. Prejudices against women and girls are reflected in the demographic ratio of 929 females for every 1,000 males.

To support India's goal of achieving universal primary education, the World Bank is supplementing increased state government expenditure. This has boosted school enrolment, particularly among girls and disadvantaged children, and is improving the quality of instruction and learning achievement.

Amartya Sen reckons that India could enrol all its children in primary school by spending an additional 0.5-1% of GDP. Providing basic health and education is not expensive where labour is cheap. But health and education indicators, while showing some progress, still remain among the world's lowest.

Public sector

Another big problem is India's notoriously bloated and inefficient public sector. The World Bank has turned down applications for power loans worth $750 million for projects in some states because of mismanagement in their government. Many electricity boards have become insolvent as a result of providing electricity at extremely subsidised rates and ignoring large-scale thefts of electricity. State governments have been unable or unwilling to take the politically unpalatable decisions needed to make their electricity boards viable.

The most telling evidence of the cost of delaying reform is the sheer effort companies have to expend to cope with the country's labyrinthine bureaucracy. For example, foreign investors continue to seek permission from the Foreign Investment Promotion Board, even though their plans are covered by the automatic approvals system.

Corruption

An immediate threat to India's governance is not the tottering coalition governments or the BJP, but corruption. The combination of a state-run economy and weak political institutions created all too many opportunities for crooked politicians and bureaucrats.

Worse still for the business community is that the government itself is the fountain-head of corruption. This is particularly serious in view of the huge importance of the government sector in India's economy.

Corruption has become ubiquitous at all levels and is accepted by everyone. Many Indian businessmen feel that liberalisation of the economy will have no impact on reducing the corruption that has become so well entrenched. The influx of foreign companies is already unleashing a new wave of even greater corruption. A survey of 183 US firms conducted by the US embassy in 1995 revealed that US investors rated corruption in India as the third worst problem they faced after red tape and a lack of electric power.

The blame for the deluge of corruption in India lies in the lack of transparency in the rules of governance, extremely cumbersome official procedures, excessive and unregulated discretionary power in the hands of politicians and bureaucrats, who are prone to abuse it, and a lax judiciary.

Tax Problems

Tax reforms have been seeking to transform India's tax system from one with high differential tax rates falling on a narrow base, into one with tax rates at moderate levels falling on a broad base. The 1995 fiscal budget reduced taxes on corporate income, and a major reform of excise taxes has been implemented to make it resemble a value-added tax more closely.

But the government's income is also constricted by an inefficient taxation system. Rural areas are not taxed because they contain such a large pool of voters and no government has had the political will to change this. Income tax is skilfully dodged.

This leaves the government with excise and customs duties, which represent two thirds of all taxes.

Labour market

India needs greater labour market flexibility to make its companies more competitive and its economy more productive. Politically powerful labour unions have stifled most efforts at serious reform or privatisation of India's largest public sector enterprises, including most banks, all insurance companies, and many major industries, even though privatisation would probably cost the jobs of no more than 1.1% of the urban labour market. India's labour laws hinder efficiency and growth.

Financial sector

India's financial sector still cannot effectively mobilise and mediate capital to respond to economic changes. The resulting high cost of capital makes Indian industry and exports less competitive. In spite of recent improvements, India's equity markets are still too thin and volatile to inspire great confidence on the part of domestic or foreign investors. Bond markets are practically non-existent. Liberalisation of the insurance industry, which would greatly improve the investing of India's substantial savings, now 26% of GDP, has been stymied. India's banking system remains flawed, with the dominant state-owned banks still carrying bad loans amounting to 15 to 25% of their total.

Outlook

The arrival of a BJP-led government in March looked like a setback for freer trade. It took two steps away from trade liberalisation. Firstly, India's anti-dumping procedures were tightened. Secondly, the Finance Minister imposed an extra tariff of 4% in June. However, it is too early to conclude that India is returning to protectionism. The government insists that tariffs were increased to raise revenue, not to protect Indian business.

BJP strategy regarding foreign investment

BJP party leaders seem keen to limit foreign investment in all areas other than infrastructure. They are worried that Indian culture will be eroded by western consumerism such as food habits brought in by Kentucky Fried Chicken or McDonald's. Such sentiments cause alarm.

"Foreign investors are not exactly queuing up to enter India, and this attitude will scare away those who are weighing up the possibilities of doing business here," cautions a top executive with a foreign investment bank in Bombay. In its defence, the BJP says that while it seeks to protect domestic industry and reserve "India for Indians", it does not intend to take back the reforms. But approved and actual foreign direct investment already shrank between January and July 1998. Approvals totalled only $4.7 billion, compared with $7.1 billion in the same period in 1997 and actual inflows slid to $1.6 billion from $1.9 billion.

Furthermore the BJP's decision to conduct five nuclear tests in May 1998 underscored India's reputation for unpredictability and highlighted the vulnerability of infrastructure investment to international and domestic political pressures. The sanctions imposed by the US on India include bans on private banking assistance to the Indian government and pressure on multinational lenders such as the International Monetary Fund to withhold loans. The sanctions hit the Indian economy and Indian companies generally, and were potentially very onerous for foreign developers.

On the other hand, the government recently encouraged foreign direct investment. In July 1998 it put forward a plan allowing foreign companies to take stakes of up to 26%

in Indian insurance companies, having resisted opening the insurance market to foreigners in the past. "Automatic" approval of foreign investment of up to 100% was extended to more sectors of industry.

Recent development of the macroeconomic situation

The macroeconomic situation is also causing concern. After a year of patting itself on the back for escaping the Asian crisis, the Indian government is now sitting up at some spine-chilling signs that the economy hasn't been unscathed after all.

India's gross fiscal deficit will rise to 6.6% of GDP from a planned 5.7% in 1998, forcing the government to keep borrowing and pushing up interest rates. But the government's infighting and inability to push through much-touted economic reform bills raises doubts as to whether it can tackle these problems.

The ballooning trade deficit comes on top of sluggish industrial production, high inflation (a 9% annual rate in the first half of November), and an expanding budget deficit. Currency devaluations in the rest of Asia have made Indian exports even less competitive than they were previously.

The current deficit of $2 billion has been pushed to the highest level since 1991. The rising deficit is financed by foreign-exchange reserves, and is expected to put upward pressure on the rupee .

On the other hand, GDP growth is forecast to move upwards to 6.4% in 1999. This follows a slowdown to 5.1% in 1998 due to a 1.5% decline in agricultural production, slowing exports, and industrial growth. Factor-cost GDP is forecast to expand by an annual average of 6.7% until 2002-2003.

Overall, it remains to be seen how entrenched the reforms are in India in the face of more difficult and troubled economic conditions.

Bibliography

Amar, A. D. (1996) "The business opportunity of the next century: India" in *The Mid–Atlantic Journal of Business*, (December 1996).

Anonymous (1996) "India: Poised for growth", World Trade, October 1996.

Basu, K. & P. Patnaik (1995) in D. Mookherjee *Indian Industry – Policies and Performance*. Oxford University Press: Oxford.

Bouton, M. M. (1998) "India's problem is not politics" in *Foreign Affairs*, (May/June 1998).

Bristow, D.(1998) "A stake in the road to modernisation" in *Accountancy Int.*, (December 1998).

Daneels, J. (1998) "Slow steps forward" in *Asian Business*, (May 1998).

Gaiha, R. & V. Kulkarni (1998) "Is growth central to poverty alleviation in India?" in *Journal of International Affairs*, (Fall 1998).

Heeks, R. (1996) *India's software industry*. Sage Publications: New Delhi.

Hess, P. & C. Ross (1997) *Economic Development*. Orlando.

Javalgi, R. G. & V. S.Talluri (1996) "The emerging role of India in international business" in *Business Horizons*, (Sept/Oct 1996).

Joshi,V. & L.M.D. Little (1996) *India's Economic Reforms 1991-2001.* Clarendon: Oxford.

Kumar, S. (1996) "Corruption slows growth" in *Asian Business,* (December 1996).

Lane, P. (1998) "World trade survey: India's hesitation" in *The Economist,* (October 1998).

Nayyar, D. (1997) *Trade & Industrialisation*. Oxford University Press: New Delhi.

Sen, A & J. Drèze (1997) *Indian Development: Selected Regional Perspectives.* Oxford University Press: Oxford.

Sen, A. & J. Drèze (1995) *India: Economic Development and Social Opportunity.* Oxford University Press: Oxford.

Shiraz, S. (1998a) "Jettisoned hopes" in *Far Eastern Economic Review*, (24/9/98).

Shiraz, S. (1998b) "No clear winner" in *Far Eastern Economic Review*, (26/02/98).

Sidhva, S. "No escape" in *Far Eastern Economic Review*, (14/1/99).

The Economist (21/1/1995) "A survey to India" in *The Economist Supplement.*

The Economist (12/8/95) "India's Economic Nationalists"**.**

The Economist (9/1/99) "Asia: Uses and misuses of Amartya Sen".

Todaro, M. P. (1997) *Economic Development*. Longman: London.

World Bank (1982, 1987, 1997b) World Bank Development Report. OUP: New York 1982.

World Bank (1997a) *Country Study: India - Achievements and Challenges in Reducing Poverty*. World Bank: Washington D.C.

World Bank "Country brief India 1998". http://www.worldbank.org.

World Bank "India at a glance 1997". http://www.worldbank.org.

World Bank Book (1994) *Trends in Developing Economies.* World Bank: Washington D.C.

Was The "Tequila Effect" Rational?

Richard Doyle, Dominic Scott and Carmel Crimmins- Senior Sophister

Financial contagion is the phenomenon where flows of capital to one economy result in increased likelihood of similar flows to another country. There are both rational and irrational causes of this contagion and it is this very point that is addressed by Carmel Crimmins, Richard Doyle and Dominic Scott. By investigating the causes of the Mexican devaluation of 1994 and the subsequent consequences on the world's emerging markets, they conclude that the 'Tequila Effect' was rational.

Introduction

The aim of this paper is to establish whether contagion in international capital markets is a rational or irrational phenomenon. Contagion is identifiable whenever large amounts of capital flows, either to or from one country, increase the likelihood of similar flows in other countries. Contagion can be thus positive (capital inflows) or negative (capital outflows). In this paper we concentrate on negative contagion. We focus our analysis on the Mexican Peso crisis of December 1994 and the negative reverberations this event unleashed upon emerging markets worldwide. We consider the rationality of this so-called 'Tequila Effect'.

First, we familiarise ourselves with the various explanations for contagion between countries, both rational and irrational. Secondly, the events leading up to and including the Mexican crisis are examined. Thirdly, we take a cross section of countries, subjected to varying speculative pressures as a result of the 1994-95 crisis, and analyse the factors that caused such pressures. Using this data we establish how rational the markets were in discriminating between these countries.

On the basis of our findings we conclude that "the first financial crisis of the 21st Century" was caused by macroeconomic similarity and the demonstration effect. However, the magnitude of the capital outflows does suggest an element of irrational self-fulfilling panic among investors. Although no two financial crises are the same and much research remains to be done, it would appear that investors, while not immune to irrational action on the whole, only withdraw their capital when they have good domestic economy reasons for doing so.

Section 1: What Causes Contagion?

This section will discuss the various theories that have been put forward, either in isolation or in conjunction with one another, to explain contagion in the international capital market. They seek to explain how a crisis in one country can cause a crisis in another country; that is, the channel(s) by which contagion spreads. The analysis will assume that there are two countries, A and B, both of which suffer destabilising crises in that order. This overview will be the basis upon which we evaluate the 'Tequila Effect' and, in particular, whether it was rational or irrational.

'Rational' Explanations

Trade
Strong trade links are one possible explanation of contagion. If A suffers a devaluation of its currency, then B will experience a fall in its international competitiveness. This is because its exports become more expensive relative to A's exports. Thus there is an increased incentive for B to devalue its currency in order to regain its competitiveness.

Furthermore, because individuals in B demand more imports from A, they require more foreign currency to satisfy this demand. This pressure on the international reserves of B's Central Bank causes a greater expectation of devaluation as the central bank has less insulation against an attack.

Another trade channel is that of commodity prices. When A experiences a crisis, it demands less imports. This causes the prices of commodities to fall, which then negatively impacts on countries, such as B, that are heavily reliant on the export of raw materials.

Macroeconomic Similarity and the Demonstration Effect

Similarity in macroeconomic (including political) conditions and economic policies may also explain contagion. Suppose there is a devaluation in A. Investors become suspicious of countries that are similar in macroeconomic terms, such as B, because they may believe that there is causation running from a certain set of macroeconomic conditions and/or policies to currency devaluation. Their expectations are accordingly altered with the ultimate result being devaluation in B.

The "demonstration effect" is related to this theory. The effect is that the crisis in A demonstrates to investors that there could be cause for concern about countries of a similar macroeconomic nature. Once the crisis strikes in A, investors scrutinise B more closely and may find that everything is not to their satisfaction, contrary to their previous belief. This demonstration effect would certainly help to explain why crises tend to arrive in groups. A variant of this argument is the model of Calvin and Leahy (1995). They claim that even though difficulties are suspected in B, investors wait because it is costly for them to take a position in advance of a crisis. Therefore when a crisis erupts in A it has the effect of confirming the suspicions of investors in B, resulting in a devaluation in B.

The attitude to risk of those investing in B may be influenced by a crisis in A. If they become more risk averse, having being 'stung' by the crisis in A, they may withdraw capital in other similarly risky countries. This point is similar to that of macroeconomic similarity, except that this case requires a change in investors' risk preferences for the crisis to spread to B.

'Good Practice'

The importance of maintaining liquidity, known as 'good practice', might also explain contagion. If investors experience losses due to a currency crisis in A, they may need to sell assets in B simply to maintain a sufficiently liquid portfolio of assets. The outflow of capital from B could then trigger a devaluation of its currency. Furthermore, the fact that A has devalued reduces the political cost of B devaluing its currency.

'Irrational' Explanations

Alternatively, economic agents may be prone to irrational behaviour at the time of crises. There may be a characteristic, inherent in economic agents, which engenders behaviour that simply does not make sense.

Asymmetric Incentives

A more specific explanation focuses on the asymmetric incentives that agents dealing in the financial market face. For example, fund managers potentially have a huge amount to lose by holding assets in a region (A and B) in which A has experienced a currency crisis in contrast to withdrawing funds from the region and investing elsewhere (C). Ultimately, they will lose by such a withdrawal but this loss is dwarfed by the potentially catastrophic loss that would result if B suffered a crisis.

Non-Macroeconomic Similarity

Similarity of some non-macroeconomic or political characteristic is advanced as an explanation of contagion. Though the economies of A and B may not be explicitly linked in an economic or political sense, they may be linked by a common temperament. Thus, when one thinks of the 'Latin temperament' (where A and B are Latin countries), one may have images of flair, flamboyance and a particular reputation. This may be perceived as a sufficient reason for investors to disinvest in B because of a currency crisis in A. A related case is that of the currency of a set of countries. If the name of the currencies of A and B is the same, then investors may associate A and B (and their fortunes) together. Thus whenever A experiences a crisis, B would be expected to follow suit.

Information Cascade

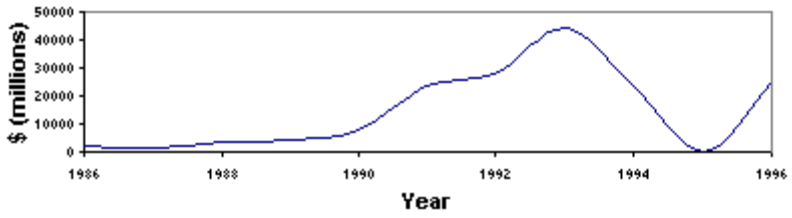
Shiller (1995) provides an alternative explanation. It is based upon the idea of information cascade. Agents' decisions are shaped by their local conditions. Once one agent reacts on the basis of information in their locality, say A, other investors may incorrectly interpret this as a signal with global implications. This signal can then trigger a crisis in B as the information cascades from one agent to another, giving the impression that there is global agreement on the issue.

Section 2: The Mexican Crisis

Background

In 1987, Mexico undertook a comprehensive process of "macroeconomic stabilisation and structural transformation". This included the tightening of fiscal policies, the use of the exchange rate as a nominal anchor, trade and exchange liberalisation, privatisation and the restructuring of external debt. In spite of all this, Mexico suffered a currency crisis in late 1994, a crisis that resulted in a 7% contraction of real GDP in 1995. Why did this happen?

Figure 1: Total Foreign Investments to Mexico 1986-1996



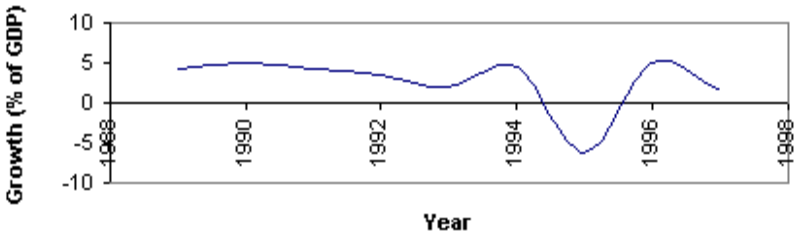
Ignoring the Signals

Krugman argues that the Mexican crisis is an example of a speculative bubble bursting, and his theory fits well with the facts. He cites, among other factors, the fall of communism, the adoption of 'free market religion' by the emerging economies and the world-wide fall in interest rates in the early 1990s as causes of excessive investor optimism in emerging markets. One result was the massive rise in capital inflows to Mexico (see Figure 1).

The speed and scale of the rise in total foreign investment in relatively untested waters signified substantial investor optimism regarding the economic reforms, and a lack of vigilance regarding Mexico's economic performance. Although economic growth was strong, as shown in Figure 2, it did not match the spectacular rise in foreign investment. The economy grew at an average real rate of 3.1% in 1989-1994,

and experienced negative growth in the second half of 1993 (Figure 2 shows smoothed annual growth, explaining the positive growth rate illustrated for 1993).

Figure 2: Mexican GDP Growth 1989-1997



Although inflation fell from around 25% in the 1988-1991 period to 7% in 1994, the fall was not quick enough or large enough to stop a massive real exchange rate appreciation. Exacerbated by this loss of competitiveness, a pre-election spending spree and deterioration in private sector savings, the external current account deficit grew steadily from 1.4% of GDP in 1988 to 8% in 1994. Investors' lack of regard for these indicators was compounded by the government's failure to publish data on foreign exchange reserves, which plummeted from $25bn in 1993 to $6.5bn in 1994.

Panic

In 1994, prompted by a substantial rise in world interest rates, a peasant revolt, an earthquake and two political assassinations, the markets became increasingly uneasy about Mexico. Foreign capital fled. Interest rates rose to 16% in July, but this added fuel to fears of a recession-avoiding devaluation.

In December 1994, the peso was devalued by 15%. This is considered a "botched devaluation" because the Mexican authorities lost all credibility but did not satisfy the market, as the devaluation was too small. The result was a near-complete loss of confidence, the peso free-falling to half its pre-crisis value, inflation averaging 52%, interest rates peaking at 80% and a 7% contraction of real GDP in 1995.

Rescue

In January 1995, the USA orchestrated a $50bn international loan which, in conjunction with a stringent adjustment program and rapid export growth in 1996 (a rise of 20% from 1995), restored confidence and growth by 1996. The rescue plan raised fears of moral hazard, but was justified by Mexico's "good track record" and desire to avoid risk of systematic repercussions: "Mexico's crisis could raise doubts [*unwarranted by fundamentals*] about the viability of policies in other countries as well", according to Mr Camdessus. This paper aims to discover if the Tequila effect was a form of rational or irrational contagion, and hopefully can shed some light as to whether Mr Camdessus's fears outlined above were warranted.

Section 3: The Tequila Effect

In this section we investigate why some emerging markets were hit by financial crises in the wake of the Peso devaluation while others were not. We analyse the discriminating factors and test their rationality. We conclude that the Tequila Effect was transmitted by a rational demonstration effect based on shared macroeconomic fundamentals. Although the demonstration effect was largely rational in its discrimination between "weak" and "strong" countries, it did, however, contain an element of irrationality; nervous investors often withdrew their funds in the expectation that other investors would do likewise. "Therefore, the *possibility* of panic, which has existed before December 1994, became the *fact* of a panic after

December 1994".

Argentina

Between December 1994 and March 1995, Argentina suffered badly from the Tequila Effect. Bank liquidity tightened, interest rates surged and 15% of deposits were withdrawn from the banking system. International reserves decreased substantially, while the stock market fell by 35%. The authorities reacted by obtaining international aid and establishing lender of last resort facilities, which eventually led to a restoration of confidence and an economic recovery.

Reform

Like Mexico, Argentina had been implementing pro-market reforms prior to the crisis. In March 1991, Argentina adopted the Convertibility Plan, under which it made considerable progress in stabilisation and structural reform. The peso was pegged to the dollar by a currency board, indexation was eliminated and domestic credit was limited by the Central Bank. Structural reform was undertaken by the deregulation, privatisation and liberalisation of the economy. Argentina enjoyed a strong macroeconomic performance from 1991 to 1994. Real growth averaged 7.7%, inflation was massively reduced, the fiscal situation was stable and the current account deficit remained below 4%. Table 1 shows this:

Table 1: Selected Economic Indicators for Argentina 1991-95

	1991	1992	1993	1994*	**1995****
Real Growth	8.9	8.7	6.0	7.1	**2.0\3.0**
Consumer Prices	84.0	17.5	7.4	3.9	**3.6**
External Current Account Balance	-0.2	-2.8	-2.9	-3.7	**-2.0**
Overall Balance of Non-financial Public Sector	-0.8	0.7	2.1	0.1	**1.5**
Gross Official Reserves	8.6	8.6	9.7	9.3	**9.1**

Source: IMF - * Preliminary * *Program Former two: % change Latter three: % GDP

Superficially, it seems that the situation in Argentina did not warrant a crisis. Its strong macroeconomic performance before the Mexican devaluation was underpinned by extensive reforms to which the government appeared committed. The fact that Argentina has made a good recovery from the crisis also suggests that the crisis was unwarranted. What then was the problem?

On Closer Examination

Argentina and Mexico are not important trading partners, so the trade channel is inapplicable here. Equally, the exercise of 'good practice' is difficult to gauge. The demonstration effect, however, seems to be pertinent. We claim that after the Mexican crisis investors scrutinised Argentina and on closer examination discovered cause for concern.

The Demonstration Effect

Argentina's current account, despite being below 4% GDP over 1991-94, had (like Mexico's) been widening and had actually increased by 0.8% GDP in 1994. In addition, the fiscal situation had deteriorated due to expenditure overruns and a reduction in employer social security. Indeed, the need to maintain a healthy fiscal surplus was emphasised in the IMF rescue plan.

In addition, though Argentina's reform was impressive, the fact remained that it was incomplete when the Tequila Effect struck. Thus, even if the Argentinean government was genuinely committed to reform, there was still the possibility that it might renege on its reforms. Indeed, the enhancement of labour market flexibility was pinpointed by the IMF as being crucial to improving Argentina's international competitiveness after the Tequila Crisis. The crucial point is that *investors*' information may have given them reason to worry about Argentina.

Furthermore, as in Mexico, there were tensions in the Argentine banking system. Latin America has a long history of banking crises and Argentina had problems in the early eighties. Though it had since begun reform, the rapidity of its economic growth and the magnitude of capital inflows meant that there were many opportunities to make soft loans. The bank reform undertaken after the crisis implied that some banks were too small while others were still state-owned, thus bank reform had not kept pace with the liberalisation of capital flows. The fact that Argentina signed up for the Special Data Dissemination Standard could be evidence that there was inadequate transparency before the Tequila Crisis.

This 'closer examination' suggests that investors were rational in their concern about Argentina. Therefore, their withdrawal of funds from Argentina and the Tequila Effect was rational.

The Philippines

The Philippines was the Asian country most deeply affected by the Tequila Effect. The duration of speculative pressure on the peso was longer and the drop in stock prices greater – by April 1995, the stock indexed measured in dollars stood 16.7% its previous November level - than for any other country in Asia. Was the capital flight by small investors of US$1 billion in the first quarter and the US$500 million outflow of residents' portfolio investment justified on rational grounds?

Channels of Transmission

Similarity in macroeconomic fundamentals appears to be the most important rational factor in the Philippines' intoxication with the "Tequila Effect". Although Eichengreen et al found that trade links rather than macroeconomic similarities are the dominant channel for contagion this explanation is not adequate in the case of Mexico and the Philippines. Neither the level of trade between the two countries nor the degree of export competition between them is large enough. The 'good practice' argument, while plausible, is difficult to gauge.

Macroeconomic Climate

The Philippines had long been regarded as an economic pariah. Throughout the 1980s GNP increased by only 1.5% per annum, a pittance when compared to the double-digit growth rates of the neighbouring Southeast Asian tigers.

Table 2: Selected Economic Indicators (1990-94)	Philippines	Mexico
Real Exchange rate % Change Average (90-94)/(86-89)	-6.7%	-28.55
Current Account Average (% GDP)	-5.9%	-3.5%
Rate of Growth (%GDP)	2.5%	3.0%
Inflation	11.7%	16.95%
Fiscal Deficit	-2.3%	-1.16%
Source: Sachs et al (May 1996).		

In the early 1990s financial restructuring and reform began in earnest. These measures together with the Philippines' geographic location in Southeast Asia provoked a positive response from international capital markets. In 1993 the Philippines' stock market was the Far East's best performer with gains for the full year reaching 134%. As was the case for Mexico, however, the stock market gains were only marginally related to the performance of the domestic economy (see Table 2).

"Growth," said Mahathir Mohammad, the Malaysian Prime Minister, "is a wonderful buffer. Like a river in flood, it obscures the rocks below".

Mahathir may have been right about the camouflaging effect of Malaysian economic growth (8.7% as a percentage of GDP for 1989-94) but really the Philippines growth rate was more of a trickle than a river. Between 1989 and 1994 the economy grew an average of 2.5% per annum, just enough to keep per capita income steady given the equivalent yearly population growth rate of 2.5%. Indeed, in 1991 the Philippines experienced negative growth of 0.5%.

If high growth rates were not responsible for the large investment flows then what was? Perhaps investors were interested in the potential, as opposed to the actual, performance of the economy. This is rather unlikely given the short-term nature of most incoming investments. In addition, private and public provisions for future economic growth were not particularly worthy. The Philippines has a low rate of saving; meaning that most of the deficit on the current account (average of 4% for the period 1989-94) was financed using foreign capital. A large current account deficit financed from overseas is not necessarily pernicious provided borrowed funds are used for profitable ventures. Unfortunately, a large amount of public revenue was spent on public sector wages and the servicing of domestic and foreign debt, with little left over for capital spending.

The most likely explanation for the large capital flows into the Philippines is irrational positive contagion. The demonstration effect unleashed by the Mexican crisis thus provoked a rational outflow of funds.

Chile

In the series of financial crises in Latin America in 1982, Chile was one of the worst affected: output fell by 14% and unemployment rose to 20%. Yet in 1995, Chile was

largely unaffected by the Tequila Effect. Economic growth in 1995 was robust (real growth was 8.2%), and the nominal exchange rate actually appreciated by 10% in the first quarter of 1995, reflecting investors' sense of safety in the Chilean peso. Why did Chile fare so much better in 1995, especially when compared to Mexico and Argentina?

Different macroeconomic policies are cited as the main cause: Chile was one of the leading Latin American reformers after the 1982 crisis. The Chilean peso was floated within a sizeable band, of which the central rate was pegged to a basket of the yen, deutschmark and dollar. The central bank was made independent, with the aim of promoting export growth as well as reducing inflation. Consistent with the policy of export promotion, a series of devaluations in the 1980s helped maintain competitiveness (the peso fell 30% in real terms over 1982-1986).

Fiscal policy was tight, averaging a surplus of 1.7% of GDP in 1989-1994. This, in conjunction with radical reform of the pension system helped to raise domestic savings, which rose to 25% of GDP in 1995 (compared to Argentina's 15%). This enabled substantial investment to be financed by domestic money, and helped quash fears of 'over-reliance' on inflows. Some capital controls were imposed to keep the real exchange rate stable: foreign investors were obliged to keep their cash in the country for at least a year, and restrictions on foreign bond issues launched by Chilean companies were imposed. The result was large inflows of foreign investment of a long-term nature, thus dramatically reducing reliance on jittery short-term portfolio investment.

Chile maintained investor confidence in 1995 by pursuing economic policies consistent with a correctly valued real exchange rate, while the capital curfews arguably helped to avoid short-term investor panic from materialising into massive outflows. Chile's weak trade links with Mexico discounts this channel for rational contagion. The lack of macroeconomic similarities, as discussed above, discounts the other main rational channel. This suggests that the Tequila Effect was rational in avoiding Chile, adding more weight to our findings that the contagion was largely rational.

Colombia

Like Chile, Columbia was a Latin American nation little affected by Tequila. The Colombian stock market rose in January and February 1995 and then remained flat for the remainder of the first semester. Reserve levels actually rose in the first quarter.

Columbia has a strong and prudent tradition of macroeconomic management dating back to 1990. Liberalisation of trade, fiscal policy and foreign investment yielded increases in private investment inflows, albeit without the sharp fluctuations characteristic of other Latin American capital markets.

When the Tequila Effect kicked in, Columbia had little reason to be affected. The country did not have strong trading links to Mexico, and unlike the latter, its reputation with capital markets was unblemished. With the exception of high inflation (23.8% in 1994), Columbia's macroeconomic fundamentals were glowing. Moderate exchange rate appreciation, steady economic growth (4.1% of GDP for the period 1989-94), a sound banking system and oil reserves (discovered in 1993) all served to reassure anxious investors. With the reasons for investment still apparent there was no rational reason to reverse the flow.

Thailand

In early 1995, the Thai baht was attacked, despite Thailand's strong reserve position and high economic growth rate. The speculative attack was not sustained as the authorities intervened to ensure that the fixed exchange rate was maintained with

reserve losses being restricted to only $374 million. However we now know there *were* serious deficiencies in the Thai economy, particularly in the banking sector. One could conclude that the probing of investors was rational and that the pressure should have been sustained. An alternative conclusion is that a successful speculative attack was not the efficient outcome at the time, but was efficient in 1997. Thus the lack of contagion in 1995 may well have been rational.

Conclusion

The Managing Director of the IMF, Michael Camdessus, feared that the crisis in Mexico would provoke irrational contagion. Our analysis illustrates his fears were unfounded. The markets discriminated rationally across emerging markets. Countries with plentiful foreign exchange reserves and solid fundamentals did not suffer long downturns in capital inflows. In contrast, countries with weak fundamentals and low reserves endured prolonged capital withdrawals. The timing and magnitude of the capital outflows does suggest an element of self-fulfilling pessimism. Although their sense of panic may have been irrational, their targets were not, as none of the countries infected were innocent bystanders. All those affected by negative outflows of capital had previously enjoyed capital inflows over and above what their fundamentals warranted. Irrational positive contagion was countered with rational negative contagion.

According to Michael Bordo, an economic historian at Rutgers University, in every financial crisis he had ever studied, going back over centuries, when investors withdrew their capital they had had good domestic economy reasons for doing so. Although the Tequila Effect is just one example of a contagious financial crisis, its operation illustrates the rationality inherent in these outbreaks of contagion. Like any efficient market, the capital market will adjust to ensure equilibrium; if the capital flows to a particular country are excessive, the market will reduce or reverse the flow. Drinking Tequila on an empty stomach leads to dire results, so ingesting large amounts of capital without adequately preparing the economic groundwork is ill advised. As John Seldon so eloquently put it, "'tis not the drinking that is to be blamed, but the excess".

Bibliography

Brodie, Niamh (1996) "Speculative Bubbles, Irrationality and Chaos" in *Student Economic Review.*

Camdessus, Michael (May 1995) "Drawing Lessons from the Mexico Crisis: Preventing and Resolving Financial Crises - The Role of IMF".

Camdessus, Michael (27 May 1996) "Argentina and the Challenge of Globalization" in a *Speech to Academy of Economic Science, Buenos Aires*.

Council on Foreign Relations (1997) "Lessons of the Mexican Peso Crisis" in *Report of an Independent Task Force.*

The Economist (22/1/94) "Emerging, submerging¼ ".

The Economist (30/1/94) "Money and Politics: Financial Crises in Mexico".

The Economist (8/4/95) "The Tequila Hangover".

The Economist (23/12/95) "Ten Lessons to Learn".

The Economist (31/8/96) "Are Crashes Catching?".

The Economist (26/7/97) "Just What the Doctors Ordered".

The Economist (22/8/98) "Emerging Market Measles: Contagion in Emerging Markets".

The Economist (3/10/98) "Reforming World Finance: Lessons from a Crisis".

The Economist (19/10/98) "The Bankers Take Cover".

The Economist (31/1098) "Is Financial Contagion a Myth?".

Eichengreen, Barry, Andrew K. Rose & Charles Wyplosz (July 1996) "Contagious Currency Crises" in *National Bureau of Economic Research Working Paper* 5681.

Francis, David (1 Sep 98) "Why Markets Tumble Together" in *Christian Science Monitor.*

Frankel, J. & K. Froot (May 1990) "Chartists, Fundamentals and Trading in the Foreign Exchange Market" in *American Economic Review.*

Fraser, Damian (11 Apr 1994) "Survey of Latin American Finance (3)" in *The Financial Times.*

Galang, Jose (23 Feb 1994) "World Stock Markets" in *The Financial Times.*

German, Clifford (4 Mar 1994) "The Stock Markets" in *The Scotsman.*

Grant, Jeremy (7 Sep 1998) "Latin America gets Dose of Reality" in *The Financial Times.*

Hermalin, B. & A. Rose (1978) *Risks to Lenders and Borrowers in International Capital Markets*.

IMF (95/18) (06 Apr 1995) *Press Release.*

IMF Survey (March 1998) *Interview with Claudio Loser* 27 (5).

IMF (1998) "Article IV Consultation with Chile".

Kindleberger, Charles (1978) *Manias, Panics and Crashes*. New York.

Krugman, Paul (1997) *International Economics: Theory and Policy.* Addison-Wesley: New York.

Krugman, Paul (1995) *Dutch Tulips and Emerging Markets*.

Krugman, Paul (1998) *Currency Crises*: MIT Press: Cambridge MA.

Krugman, Paul (1998) *Curfews on Capital Flight*.

Krugman, Paul (5 Oct 1998) "The Confidence Game" in *The New Republic.*

Mallet, Victor (3 Jun 1994) "Tiger Cub Starts to Find its Feet" in *The Financial Times.*

Martinez, Guillermo Ortize (June 1998) "What Lessons Does the Mexican Crisis hold for Recovery in Asia?" in *Finance & Development.*

Molinski, Michael (1996) "Mexico 'Tequila Effect' May Claim More Victims, Economists Say" in *Bloomberg Business News.*

OECD (1998) "Mexico Economic Survey"

OECD Statistics Quarterly GDP (November 1998) "Gross Domestic Product, Volume" in *Quarterly National Accounts Database.*

Prestridge, Jeff (8/5/94) in *Sunday Telegraph*.

Riding, John & James Kynge (13/1/98) in *Financial Times.*

Sachs, Jeffrey, Aaron Tornell & Andres Velasco, (May 1996) "Financial Crises in Emerging Markets: The Lessons From 1995" in *National Bureau of Economic Research Working Paper* 5576*.*

Seldon, John (1689) *Table Talk.*

Banking Sector: Roots of Recession In Japan

Padraig Dixon - Senior Sophister

The recent recession in Japan exerted a large amount of downward pressure on the rest of the world's financial markets. The extent to which this debacle was caused by the Japanese banking sector is questioned by Padraig Dixon.

Introduction

On the 12th June 1998, Robert Rubin, the U.S. Treasury Secretary, described a series of official economic data released in Tokyo as "worse than expected". The figures showed a decline in output in the first quarter of 1998 of an astonishing 5.9%. These figures also meant that the Japanese economy has now shown two consecutive quarters of decline in output, the generally accepted definition of a recession, and also showed that the economy declined by 0.7% for the fiscal year ended March 1998. This is the first time since 1974 that the economy has contracted for a full year. Commentators are expecting an even worse performance for this fiscal year; many Western observers say a full 2% contraction is likely. Detailed tables consisting of public, private and IMF statistics and estimates for Japan's main economic indicators are included in the tables at the end of the essay.

Rubin's comments were another example of the intensified scrutiny and pressure that is being brought to bear on Japan from influential figures from the U.S. Treasury, the IMF and a host of other public and private institutions. Rubin, President Clinton and other members of the U.S. administration are becoming increasingly explicit in their warnings and admonitions to Tokyo, fearing that the unhealthy condition of the world's second largest economy imperils the world economy and may be presaging a global deflationary recession. President Clinton warned Tokyo, "you simply cannot stay with a strategy that is clearly not appropriate to the times and expect it to get the results that are needed for the country"; he also recommended the taking of a "bold course" to deal with the economy's difficulties.

Eventually, the Under-Secretary of the Treasury, Larry Summers, felt compelled during the summer to take the unprecedented step of making an outright criticism of the way the Japanese economy was being run. Reluctantly supporting the U.S. policy of supporting the declining yen and unhappy about the tentative nature of proposed economic and financial reforms, he bluntly declared that the yen would fall further unless meaningful steps were taken to redirect and reform the economy, especially the banking sector. Stanley Fischer, the deputy director of the International Monetary Fund was equally vocal in his criticisms, especially of the financial sector, saying "Japan's weak financial system has hampered the recovery of the economy for most of this decade".

These comments are themselves enough to draw attention to the plight of Japan. Coming from such influential figures, they illustrate the magnitude and seriousness of the problems facing the economy. The comments are also useful in that they treat some of the key issues of current problems. In this regard, Clinton's comments are particularly perspicacious because they contain the general observation that the procedures, arrangements and policies that served Japan well in the past may be now inhibiting recovery and contributing to the prospect of reduced growth after any recovery. This will be one of the main themes of this essay, as will the problems faced by the banking sector in Japan. Summers and Fischer have both identified the emasculated condition of the Japanese banking and financial sector of being of particular concern, which has outstanding delinquent loans of over ¥100 trillion according to some private sector estimates, equivalent in size to the whole Chinese economy. Rubin's concern over the macroeconomic state of Japan is well founded, since Japan appears to be in the throes of an extremely severe recession and appears to be immersed in a canonical Keynesian liquidity trap and a Fisherian debt deflation scenario.

These issues will also be discussed in this essay, which attempts to provide an explanation of current problems, in terms of their cause and course. Japan faces major changes to its economic and financial systems, and from this are likely to proceed widespread and permanent alterations to the political and social fabric of Japanese society. Already, during the course of the current slump, the Liberal Democratic Party (LDP) experienced an interruption to the rule it had experienced virtually unchallenged since the end of

World War II. The causes, consequences and significance of the changes in the economic and financial sphere are analysed, and the review begins with a brief description of the Japanese asset price bubble of the late 1980s, but the emphasis in the essay is on contemporary responses to contemporary problems.

The essay therefore proceeds in the following manner: the asset price bubble is discussed with reference to the activities of the banks during this period. This involves a lengthy discussion of the industrial structure of Japan, where banks play an extremely influential role. The industrial structure is one of the many aspects of the Japanese economy which is faced with widespread change and thus is of interest in its own right. Theoretical analyses of financial sector problems and their implications for the macroeconomy are then discussed. A brief review of the macroeconomic condition is then presented, and this section shows how the problems faced by the banks are an extremely important factor in explaining the present state of Japan, but the discussion also shows how fiscal and monetary policies have introduced problems of their own as well as compounding the problems faced by the banking sector. Recent attempts to solve the banking crisis and assess their success in the light of events since the introduction of reforms will then be described. Current problems and the corresponding policy responses that face the economy as a whole conclude the essay.

The bubble has had important ramifications on the present state of the banks, whose condition is undoubtedly at the root of so much of Japans current malaise. The bubble economy may be said to have begun with the Plaza Accord of 1985, designed to reduce the burgeoning current account deficits of the U.S. The agreement resulted in a doubling of the value of the yen, which represented a sharp shock to an economy that had hitherto enjoyed export based economic growth. The immediate result was that the economy fell briefly into recession to usher in the period of *endaka* or ‘high yen crisis'. The Bank of Japan responded by cutting interest rates, so that by February 1987 official discount rates had reached a post-war low of 2.5% and the *endaka* was overcome. As soon as the economy had reverted to this more solid growth trajectory, the Bank of Japan was reluctant to raise interest rates to pre-*endaka* levels because of the subsequent Louvre Accord, which stipulated that the signatories try to keep exchange rates ‘around current levels'. The stock market crash of October 1987 also raised fears that a premature tightening of monetary policy could have disastrous effects on the financial system.

The bubble started because of the enormous amount of liquidity available to borrowers implicit in such low interest rates. The structure of the ensuing bubble basically revolved around the practice of using the rising value of property as collateral for speculative borrowing. Much of this speculation was directed towards equity and property markets, thus intensifying the process of borrowing and speculation. Valuations in these markets reached staggering levels; at the height of the bubble Japanese real estate represented one third of all wealth in the world and the capitalized value of the stock market stood at 42% of world stock market value. In theory, Japan could have bought Canada or Australia simply by selling the land underneath the Imperial Palace or the whole of the U.S. by selling off downtown Tokyo. To understand the condition of the banks and their activities during the bubble, a lengthy analysis into the structure of industry and banking is necessary, which is of importance in its own right as it allows insight into some of the most significant features of the Japanese economy.

An important feature of the Japanese economy and its current slump is the three way connection between companies, other group companies and their main banks. Japanese companies rely on funds provided by banks to a far greater extent than in any comparable economy. In a survey conducted in 1992 of 110,000 companies, 90% felt that they had some sort of main bank relationship. This relationship must be considered within the network of the *keiretsu,* a group of companies linked by cross-shareholdings, business contracts, mutual co-operation and often a common name. Keiretsu may be horizontal (across different suppliers) or vertical (between a manufacturer and its suppliers, distributors and retailers). Since there is generally extensive cross holdings of equity, implying reciprocal ownership, the members of the keiretsu are effectively safe from hostile takeover. Garuda supplies the following example of the Mitsubishi keiretsu. In 1987, Mitsubishi Bank owned 4.6% of Mitsubishi Heavy Industries. In turn, Mitsubishi Heavy Industries owned 3.5% of the equity of the bank. As Garuda notes "Although such cross shareholdings are small on a bilateral basis, they are substantial for the group at large. In aggregate, more than 20% of all the outstanding shares of Mitsubishi group companies are held by others within the group. Still more stock is in the hands of peripheral group companies, which typically maintain weaker but still significant ties to the main bank".

In theory, this means that managers can concentrate on long term decisions, and not have to worry about dressing up earnings reports, purely for the sake of avoiding the attention of aggressively acquisitive

competitors and the ire of impatient shareholders. Similarly, all keiretsu have a close relationship with a main bank, often a member of the keiretsu itself. The bank is supposed to take a long term view, allowing them to provide readily available, committed finance to develop client investment projects. In many cases, because of large equity holdings, banks often have the right to appoint directors, implying very close relationships. The bank therefore has the incentive to monitor the firm very closely, and it is especially competent to do this because of access to detailed accounts and records at the firms. This information will in some cases be known only by the firm and its bank; a problem exacerbated by the intricacies of the Japanese accountancy system. An important consequence of this system of business practice is that firms face relatively little pressure from shareholders and other investors, since the main bank is generally accepted as being the primary agency for monitoring the firm and for collecting information relating to the outcome of the firms investment decisions. This generates a type of inertia on behalf of investors, who will be reluctant to commit resources and time in acquiring difficult to obtain information. These areas became a hotbed for corruption. The difficulties of the firm were often overlooked by compliant or bribed bank and regulatory officials, anxious not to perturb the value of their own equity holdings by revealing damaging information.

Banks were able to use the rising stock prices to increase their capital and thus their lending. They did this by issuing equity warrant bonds in the London Eurobond market. This allowed the banks to borrow money by issuing bonds with very low rates of interest; attached to the bond was a warrant that allowed the owner of the bond to acquire some of the equity of the borrower. Unsurprisingly, investors eagerly snapped up these bonds, anxious to participate in the Tokyo bull run. These means, the banks were enabled to increase their Tier 1 capital.

To understand the significance of this, a discussion of an important element in bank regulation is necessary. The Basle Accord of the late 1980s constituted an attempt to ensure higher standards of capital adequacy. Japanese regulators had long held that the cross shareholdings of other keiretsu firms that were on the banks books constituted a ‘capital cushion'. After considerable international debate, these equity holdings were allowed as Tier 2 capital, provided the bank had sufficient Tier 1 capital. This contributed dramatically to the bubble, creating "an obvious nexus between the degree of constraint on Japanese bank expansion and the health of the stock market". The significance of this is illustrated by the fact that the banks have typically held 20% of the stock market, and that banks themselves constitute about 25% of the main stock market benchmark index, the Topix.

This capability of stock market movements to dramatically alter the capital of banks was not helped by the keiretsu system. Just as banks held some of the shares in other keiretsu members, the flip side of the coin, as noted above in the Mitsubishi keiretsu example, is that the companies also held equity in the bank. These companies almost never sell their stake for fear of giving offense and losing access to credit in the future, despite any difficulties the bank may be in. An example of the perversity of the keiretsu system was analysed by McKinsey management consultants and discussed by Wood. Between 1984 and 1990 Japanese banks reported an annual average profit increase of 13%, but if profits from long term shareholdings and short term stock market speculation are excluded, McKinsey calculated that the annual average increase in their underlying business was only 1%. The banks generated no extra cash by these deals and thus no profits, even though they registered large taxable gains. Under the keiretsu system, they immediately had to buy back these shares at prevailing bull market prices. By 1991 an average of 42% of the reported profits of the large banks came from these largely mythical securities gains.

Moreover, bank shares are held by fund managers because they account for 25% of the Topix. Therefore, as Wood notes, not to hold bank shares "is to make a career threatening bet against the value of the Topix". So a re-adjustment to fundamental value would have a huge downward effect on the stockmarket, on which depends the banks capital, as well as on the bank's themselves and the rest of the financial system.

The fudge inherent in the Basle Accord meant that the banks could literally create their own capital, which meant that they could extend more loans. These loans were invariably directed into the property and stock markets, which in turn boosted the collateral value of products from these markets, which in turn boosted the lending. In 1987 and 1988, loans collateralized by property accounted for more than half of the large banks incremental loan growth. This is the truly disturbing aspect of the stratospheric asset price inflation of this period. The issue is not so much that the price of land and stocks rose so quickly, but the means by which these rises were engineered by greedy banks and their compliant regulators. The manner in which these prices were achieved meant that the banks were extremely sensitive to price declines in these areas. Davis has

drawn attention to a number of why reasons why banks seemed to find property speculation an attractive proposition.

Collateral is readily available in the form of the property itself; banks in Japan appeared to overlook the potential illiquidity of this collateral. The sizeable front end fees add to profits immediately and help attain market share. The problems that Japans banks faced, and still face, is that this leads to balance sheet concentration and left them highly vulnerable to long term interest changes. As he points out "the heterogeniety and legal complexity of property rights results in higher transactions costs, greater information asymmetry, lower marketability and greater risks than in other asset markets" which means the results when things go wrong can be extremely painful. In Japan, the problem is even worse, because in many cases the same piece of property will be pledged in a number of separate loans.

A discussion of the facts of land use is necessary. This is intended to show that land, other than purely speculative real estate, did not appear to have been the subject of bubble dynamics and thus did not appear to be valued to far above fundamentals. However, the sheer anxiety of banks in Japan to commit as much of their resources to property as possible meant that the implications for the banks of a collapse in property values were as serious as if the land price rises were the result of a bubble, which may or may not have existed for *all* classes of land in Tokyo during this period. Less than 5% of the land in Japan is used to house all of the population. In terms of density, Japans population per unit of habitable area is 30 times that of the U.S.. 62% of Japanese households own their home. Underutilization is caused by the near impossibility of evicting existing tenants- leases are effectively renewable indefinitely while rent increases are strictly limited. Strict regulations on zoning and height also apply. All the incentives favour holding land rather than developing it, thus limiting supply. If land is sold within two years of its purchase then 150% of the capital gain is added to the sellers annual income, and if sold within 5 years then 100% of the gain is added to income and taxed accordingly. On the other hand yearly taxes to hold land during the bubble were about 0.05% to 0.10%. For inheritance tax purposes, land is generally taxed at well below market value, unlike other financial assets. Therefore, the Japanese property market is extremely illiquid, so that whenever new property came to the market, it unsurprisingly tended to attract aggressive attention. Ziemba therefore suggest that non-speculative land prices in Tokyo were overvalued by only 10%. In this case, it is difficult to understand why banks should be in so much present difficulty. However, as I have said, it is the manner in which these price rises were engineered by the banks that is of importance. Stone and Ziemba also present evidence of a 99% correlation between biannual series of land and stock prices for the period March 1955 to September 1992. No such correlation is present in the U.S. data, suggesting some factor unique to Japan. This factor can only be the activities of the banks.

The bubble burst partly because of the incipient Gulf War, but primarily because interest rates were hiked from 2.5% to over 6% by end of 1991, after the Bank of Japan finally got concerned about the escalating asset prices. At the end of the bubble period in June 1991, at which time the stock market and land markets had declined by about 60% of their peaks, the main banks had lent Y116 trillion to property and construction firms and the value of loans collateralized by land represented an astonishing 50% of GNP. Because some of the firms that banks lent to were not directly involved in construction but still speculated in the market, property has been estimated as supporting as much as 80% of banks total loan exposure.

The amount of negative equity for the owner of a typical Tokyo apartment is now estimated at 12-15 million yen, and many people are 6 months in arrears on mortgage repayments. The OECD has suggested that this may represent a restriction of ½ trillion yen per year on consumption. In Table 4 I provide interesting data on the impact of the bursting of the bubble. The data contained therein provide stark evidence of the gigantic effect that the collapse of the asset prices had on the value of capital and net worth. My main contention with respect to the banking sector is that this shock to asset and collateral value is the main economic (as opposed to political) fact inhibiting recovery of the Japanese economy. This is not necessarily the type of outcome that would be predicted by all varieties of financial theory; in an Arrow-Debreu world of contingency and frictionless markets and perfect information, such a statement would not be tenable. Alternatively, appeal may be made to the Modigliani-Miller theory of finance which states that under certain conditions, the financial system is essentially irrelevant for outcomes in the real economy. Below, I present some recent theoretical analyses of this type of shock to support my contention. More recent problems and current policy responses to the problems generated by this episode are discussed later in the essay. I now turn to the macroeconomic implications and theoretical analyses of the banks difficulties.

Modern theoretical analyses of this type of situation have been pioneered by Ben Bernanke and Mark Gerteler. In two papers, they argue for the pre-eminent role played by borrower net worth in financial fragility and macroeconomic fluctuations. They define a financially fragile situation as one in which borrowers have low wealth relative to the size of their projects. This is because the less of his own wealth a borrower can commit "the more his interests will diverge from those of the people who have lent to him". This issue will be recognized by the lender so that agency costs, and therefore the cost of investing, will also rise. This implies investment accelerator effects- healthy balance sheets increase investment demand and thus boost the economy as a whole; the opposite is true for a downturn and this analysis clearly applies to Japan at present. Bernanke and Gerteler identify such a situation as likely to happen in a prolonged recession or subsequent to a debt deflation. Japan is certainly in the former case and compelling reasons exist for believing that the economy is already in a deflationary crisis. During a debt deflation there is a fall in borrower net worth due to a decline in the relative price of collateral; the causal influence of the banks condition on the process of deflation is examined below.

Ben Bernanke has developed an influential theory of the Great Depression in the U.S. in the 1930s which follows from his observation that bank failures tended to be coincident with adverse developments in the macroeconomy. He seeks to extend and improve on the monetarist analysis of the role of the banks in this period, which he claims tends to rely too heavily on the contraction of money demand caused by a fall in bank lending in this period, arguing that the fall in money supply is quantitatively too small to account for the huge downturn in output. His theory revolves around the role played by the cost of credit intermediation, which he defines as the cost of channeling funds from ultimate savers/lenders into hands of those who desire loans in order to undertake investment projects. With a fall in collateral value (consider Table 4 again to see how large the declines in Japan are), the representative investor becomes more and more insolvent. Every class of loan now faces a higher risk of default. Consequently, lending is restricted because the cost of credit intermediation has risen because the new riskiness means higher interest rates, which is likely to be a self defeating process. Although Bernanke's theory accords an important role to the effects of panic and bank runs as well as the monetary contraction, it is supportive of the notion that the collapse in credit causes an increase in debt through its effect on collateral. In turn, this will hurt output. Another related issue that is important for Japan at present is the liquidity of collateral; property is Japan tends to be very illiquid because of the very slow volume in the market caused by the benefits from holding land. Furthermore, property, especially speculative downtown real estate, tends to be illiquid- for example, how many buyers will want a multi-storey skyscraper with specifications designed for the late 1980s and located in a particular part of town?

Aside from the implied increase in agency costs of credit intermediation that the above predictions entail, there are significant associated costs with debt deflation; a situation first analysed by Irving Fisher. "Each dollar of debt still unpaid becomes a bigger dollar…the every effort of individuals to lessen the burden of their debt increases it, because of the mass effect of the stampede to liquidate…the more the debtors pay, the more they owe". In other words, holding cash during deflation rewards the holder at a rate directly proportional to the rate of decline in prices. As Gerteler notes, this is a redistribution from debtors to creditors, and as this class includes those most efficient at managing investment projects, investment and output will decline. Because of the main banks relationship, firms have generally had much higher debt levels than their U.S. counterparts but the more general debt problem that Japan faces is that they acquired too many assets at too high a price and now liquid markets do not exist to allow for disposal. Therefore, in a deflationary environment, with a fall expected in prices, consumers have an incentive to defer as many purchases as possible till tomorrow. This is a serious problem for current Japanese fiscal and monetary policy. John Makin has pointed out that current Japanese inflation indexes understate the amount of deflation present in the Japanese economy because they fail to measure falling prices in newer, more competitive retail units. Noting the switch into cash, a sure sign of deflation, he makes the following observation "For a Japanese household, the 0.2% offered by banks on time deposits does not compensate for the widely advertised risk that many financial institutions may be insolvent".

This discussion of the effects of declining prices and very low interest rates points to an observation that is increasingly becoming more apparent in the West and in Japan. This is that Japan appears to be immured in the depths of a canonical Keynesian liquidity trap. Paul Krugman at M.I.T. has been at the forefront of efforts to redirect scholarly attention to a neglected area of modern macroeconomics. In the following section, I show how inappropriate fiscal and monetary policies have rendered monetary policy impotent and exhausted the potentialities of expansionary fiscal policy. Once again, the condition of the banks will obstruct much of

the advice that would flow from this investigation, because the banks are themselves a constituent of the failure of monetary and fiscal policy.

A country may be said to be in a liquidity trap if, because of poor long term growth prospects, the short term real interest rate may have to be negative to match full employment savings and investment. In this situation aggregate demand may "consistently fall short of productive capacity despite essentially zero short term nominal interest rates". Official rates in October were less than 30 basis points above zero. Krugman suggests that even with a very optimistic estimate of growth in productive capacity of 2% since 1990 the economy appears to be operating at well below capacity.

Monetary policy can't be used by the Central Bank to reinflate the economy because with near zero nominal interest rates, a Central Bank monetary injection in the form of bonds will have no effect since cash and bonds will be close substitutes once for another. The key point to understand, as Krugman points out, if people have low expectations about their future income, they may want to save more than the economy can absorb, despite extremely low nominal interest rates. The upcoming decline in the labour force will reduce the return on investments, thus adding impetus to the desire to save. This problem of an ageing population is central to an understanding of the contemporary Japanese economy and its liquidity trap. The 1.2 million live births born at the peak of the bubble in 1990 was the lowest since 1893, compared with half a million more births a decade earlier. The population is expected to decline in absolute terms after the end of the next decade. Optimistic projections put the ratio of those over 65 to those aged between 20 and 64 to rise from 0.23 in 1995 to 0.65 in 2050. The Japanese saving rate has fluctuated between 15-20% since the 1950s and has consistently been one of the highest in the OECD. If individuals are saving mainly for retirement, as predicted by the Ando-Modigliani life cycle hypothesis, then this represents an important constraint on Japanese fiscal policy. A recent study of this very issue by Japanese economists provides very strong support in favour of the life cycle hypothesis.

In a study of the implications of Japan's declining population for economic growth, it was noted that a declining labour force, caused by a decline in fertility rates may help to stimulate efficient technological changes ‘by tightening labour and capital resource complaints', so that the source of economic growth will shift to being driven by efficiency gains, rather than being input driven. This, however, is a long run analysis and not immediately applicable to the medium term implications of an ageing society for the liquidity trap. In any case, it still implies a lower long run rate of growth, with immediate consequences for the decisions of ordinary consumers as to whether or not to save or spend.

Therefore, it is not implausible that the equilibrium real interest rate is negative, leading to Krugman's recommendation of a period of sustained inflation to get the economy of its current illiquid deflationary scenario. This argument implies that the central bank needs to convince agents that it will not reverse its monetary expansion once inflation starts to kick in. In other words, the Central Bank has to make a credible promise to be ‘irresponsible'. This thesis - that Japan needs inflation - has been winning advocates both inside and outside of Japan, where the most prominent advocate is Kezuo Ueda, who sits on the Bank of Japans policy board. The recommendations are not uncontroversial, however. For one thing, despite the seriousness of the slump, the pedestrian observation that the inflation will raise long term interest rates still holds and this may cripple debt ridden firms. As The Economist has pointed out, the monetary injection necessary to produce the inflation will be intermediated by the commercial banks, and given the decimated nature of banks balance sheets, it is likely that the banks would use the injection to consolidate their capital base and patch up their balance sheets. Another problem is that even if the monetary expansion is successful in creating inflation, the subsequent depreciation of the yen may have extremely serious outcomes for the economies of South East Asia, struggling desperately to recover from their own financial crisis.

Any depreciation of the yen would also hurt those sectors who have borrowed heavily abroad; most conspicuous amongst this class are, once again, the banks. At the collapse of the bubble nearly 50% of the city banks assets were denominated in foreign currency, a consequence of the huge increase in overseas lending in the 1980s. Like so many of the problems facing Japan, her liquidity trap is tied up in the difficulties of the banking sector, an ageing population and extremely tough decisions which will affect different sectors of society in dramatically different ways. This brings us back to the banks and the current policy responses to this extremely grave situation. The state of the economy and possibilities for the future are discussed after a review of the proposals dealing with the banking industry, itself one of the most crucial elements in the future success of the economy.

On the 17th October 1998, new Prime Minister Keizo Obuchi managed to push through the Diet, a mammoth banking bill which represents the most concerted efforts of the government yet witnessed in the current crisis to deal conclusively with the banks. The bill was introduced against the background of huge numbers of corporate failures and instances of corporate distress. Even comparatively healthy banks are accumulating bad debts faster than the growth in their profits, so that no new provisioning against bad debts is possible after new ones have been provided for. The broad goal of the package is to deal effectively with bank failures and thereby help the banking system to become a source of strength, rather than instability, within the economy as a whole.

The package provides funds equivalent to 10% of Japan's GDP. This ¥60 trillion is be directed in two main ways. ¥43 trillion is to be provided for 'nationalising' banks about to fail and ¥17 trillion is to be provided for recapitalisation of weak but viable banks. Under the nationalisation scheme, the government intends to acquire a significant portion of the shares of a company in an effort to stop shareholders profiting from state handouts to the banks. Depositors funds will be guaranteed until 2001. For the failed banks, a type of receiver will be appointed by the Financial Services Agency (FSA) to ensure that the business of the banks is continued and neither borrowers nor depositors suffer. The recapitalisation scheme is directed mainly to the larger banks in recognition of their importance for the economy as a whole by boosting lending and by absorbing failing banks by merging. The programme will operate by having the banks apply for funds whenever their capital to risk asset ratio falls below the BIS required level of 8%.

At least part of the rationale of the package can be seen as an attempt to secure the well being of banks deemed 'too large to fail'. The FSA also has the job of inspecting the condition of the 19 most important bank, but the agency has a staff of only 550 and moreover, many of the professional staff are former Ministry of Finance officials which does not bode well for the objectivity of its operations. Bad debts are to be put under the control of the Resolution and Collection Bank (RCB) for collection and sale of collateral. It will also mediate amongst creditors to determine ownership of collateral. So far, however, it has been conspicuous in its reluctance to sell assets.

For the fiscal year ended 31st March 1998, the city banks had made provisions against non-performing loans (NPLs) of ¥10.5 trillion, the largest ever figure, achieved mostly through increased reserve levels (dealing with debt). In line with the Prompt Corrective Action guidelines introduced on 1 April 1998 and the adoption of US Securities Exchange Commision rules about accounting, the banks own unaudited assessment of their problem loans put the figure at ¥77 trillion, although most observers expect the true figure to be well over ¥100 trillion. The provision brings the total loan loss charges over the past years to around ¥38 trillion. If this figure seems large, it must be remembered that by the end of 1991, none of the significant banks had made any provisions against bad debts and that the capital of the 146 largest banks is ¥31 trillion. A more serious issue is that these loans have been merely written down, and not written off. When a loan is written off, its value is automatically zero, and the bank can suffer no further losses in connection with that loan. When a loan is written down, it stays on the balance sheet at a reduced value, and the backing collateral is not sold, so the bank must set aside more reserves if the collateral- usually real estate- falls further in value. I have attempted to show how (perhaps *ad nauseum*) important the banks are to understanding the state of Japan. The banks emaciated condition makes them less able to intermediate credit; the solutions to the liquidity trap suggested by Krugman could be neutralised if the banks used monetary injections to patch up balance sheets; the huge amount of negative equity and declining net worth caused by the activities of the banks is increasing risk aversion among potential investors. Now, huge amounts of public money are being directed towards the sector, involving taxes and yet more national debt. I turn now to the present condition of the economy and its prospects.

The current macroeconomic condition gives little comfort. An election is widely expected in the latter half of this year, and there has been a tendency to pursue expansionary spending policies before an election and then contracting afterwards. This is what happened in 1996-97. In the period 1993-96, the government flooded the money markets with liquidity and introduced a fiscal stimulus equivalent to Y60 trillion or 3% of GDP. Growth had averaged barely 1% in the period 1992-95 and hit a low in 1993. The stimulus managed to raise the growth rate to over 3% by the end of the 1996 fiscal year and avert some of the corporate failures and bank collapses that Japan is now witnessing; corporate profits are currently down by 25%. The Hashimoto administration, with an eye to the sustainability of fiscal policy in light of the upcoming demographic pressure, pursued a sharply contractionary fiscal policy in 1997, imposing a 2%-3% tax on consumer consumption and cutting public works expenditure by 14% that wiped out the previous years growth gains.

Hashimoto also seems to have initiated deregulation of the financial markets at the wrong time, since the measures will lead to a contraction in the amount of credit banks can extend, precisely a time when the government was trying revive the ailing banks. Business and consumer confidence was further damaged by a series of banking and financial scandals and private consumption and residential investment has collapsed. Consumers willingness to spend has fallen to its lowest since the 1960s.

In response to the obviously detrimental effects of the previously contractionary budget, the government undertook an embarrassing U-turn and introduced a supplementary budget in February 1998 for fiscal year 1997 that included a¥2 trillion worth of tax cuts. For the current fiscal year, each taxpayer will be receiving a rebate worth about ¥25,000, and the amount of spending will work out at about the size of the Polish economy. Critics have argued that such huge spending is unnecessary in a country that does not need any new bridges or roads.

In the labour market, there is growing evidence of skills mismatch, and unemployment reached a post-war high of 4.3% in June 1998, and appears to be heading towards 5%. Net exports fell in the first quarter of 1998 by 3.7% because of the Asian crisis; Barclays bank has estimated that the Asian crisis will reduce growth by between 0.5% to 1% as exports fall and competition increases in third country markets. This has occurred despite the fact that by the summer one US dollar was worth over 140 yen, representing an eight year low. The decline was due to the extremely easy monetary policy and differing growth prospects for the two economies. At the launch of the euro, the yen had regained some ground to stand at 111 to the dollar.

This was the first drop in exports since the *endaka* or high yen crisis of the mid 1980s. With capital spending down in the first quarter by 5.1% and the public debt expected to rise to almost 110%, the macroeconomic outlook on the whole is unambiguously grim. Morgan Stanley Dean Witter Research forecasts for the new two years are given in the Appendix as Table 2. Looking at these figures suggests that at this moment in time, it is hard to see any prospects for an upturn in the immediate future. Policy makers in Japan have been justifiably preoccupied over recent years with the problems of the banking sector and apart from the above fiscal stimulus, little in the way of macroeconomic solutions has been proposed. Fiscal stimulus can not give boosts to an economy forever, especially with the large public debt tending to make consumers more Ricardian in their outlook. At this stage it seems that Krugmans recommendations of a period of sustained inflation are the most viable ideas yet proposed. Japan may be assisted in this regard if other major countries also ran an inflation to assist them.

To return to an issue I raised at the start of this essay, what is at least clear from Japan's economic debacle of the 1990s is that factors which boosted Japan's economic growth in the past may be now inhibiting growth. Nouriel Roubini has identified areas where Japan needs to change. The first is a willingness to accept greater global competition, arguing that the reluctance to liberalize trade has prevented the type of structural adjustment that the US went through in the 1980s. In the 1980s, he points out the US suffered from freer trade and stronger competition but the benefits this restructuring forced are now being reaped. He also argues for general corporate restructuring, to destroy the oligopolistic and over-regulated markets that characterise the Japanese non-traded sector. A transition is also required away from manufacturing to the provision of high value-added services. Moreover, the traditional keiretsu firm is much less suited to services than to manufacturing, because of the reluctance of the keirestu to cut out group middlemen. Perhaps most necessary of all, however, are the difficult and significant decisions required to reform the banking sector, whose difficulties are an unavoidable obstacle to be overcome if the economy is ever to return to a more optimistic outlook.

The Japanese economy depends on the ability of the workforce and firms to endure the painful downsizing and readjustments that America witnessed in the 1980s. The quality of the recovery will be determined by the effectiveness of the responses to these difficult realities. They have shown in the past that they are an extremely adaptable people, especially after the Meji restoration of 1867 and after WW2. What is certain is that Japan is moving towards a more US style of capitalism. As the New York Times put it:

> *"a more efficient market-driven system may mean better prices and more supermarkets, but the fear is that it will also lead to alienation, crime and an end to the civility that is the most outstanding feature of Japanese life".*

With the economy stuck between a rock and a hard place, it looks like the Japanese people have no option but to change their society irrevocably.

Bibliography

Aggrawal, Raj (1996) "Emerging characteristics of Japanese finance: Responses to the challenges of the post-bubble era" in *Business Credit* 98 (10).

Barclays Economic Review (1998) *International Economy: Japan*. Barclays Bank: London.

Bernanke, Ben (1983) "Non-monetary effects of the financial crisis in the propagation of the Great Depression" in *American Economic Review* 73 (3).

Bernanke, Ben & Mark Gerteler (1989) "Agency costs, net worth and business fluctuations" in *American Economic Review* 79 (1).

Bernanke, Ben & Mark Gerteler (1990) "Financial fragility and economic performance" in *Quarterly Journal of Economics* 105 (1).

Davis, E. Philip (1995) *Debt, Financial Fragility and Systemic Risk.* Clarendon Press: Oxford.

Garuda, Gopal (1998) "A System in Flux" in *Harvard International Review* 20 (2).

Gerteler, Mark (1988) "Financial structure and aggregate economic activity" in *Journal of Money, Credit and Banking* 20 (3).

Gray, Bernard (1993) *Beginners Guide to Investment*. Business Books: London.

Hamada, Koichi (1998) "The incentive structure of a managed economy: Can it survive the millenium?" in *American Economic Review* 88 (2).

IMF (1998) *IMF concludes Article IV consultation with Japan.* IMF: Washington.

Ito, Takatoshi (1997) "Japan needs structural change" in *Finance and Development* 34 (2).

Kosai, Yutaka, Saito, Jun & Yashiro, Naohiro (1998) "Declining population and sustained economic growth: Can they co-exist?" in *American Economic Review* 88 (2).

Kristof, Nicholas (1998) "Crisis pushing Asian capitalism closer to US style free market" in *New York Times* (17/1/98).

Krugman, Paul (1998) *Japan's Liquidity Trap.* Mimeo: MIT.

Krugman, Paul (1998b) "Its Baaack! Japans slump and the return of the liquidity trap" forthcoming in *Brookings Papers on Economic Activity* (Autumn 1998)

Makin, John (1996) *Japan's disastrous Keynesian experiment*. Mimeo: American Enterprise Institute.

Morgan Stanley Dean Witter Research (1998) *Global Economic Forum*. Mimeo: Morgan Stanley Dean Witter.

OECD (1997) *OECD Economic Outlook*. OECD: Paris.

OECD (1998) *OECD Economic Surveys: Japan*. OECD: Paris.

Peek, Joe & Erik Rosengreen (1997) "The international transmission of financial shock: The case of Japan" in *American Economic Review* 87 (4).

Rogoff, Kenneth (1998) "Comments on Krugman" Forthcoming in *Brookings Papers on Economic Activity,* Autumn 1998.

Roubini, Nouriel (1996) "Japan's Economic Crisis" in *Comments for the panel discussion on 'business practices and the entrepreneurial spirit in Japan and the United States'.* Mimeo: New York University.

Rowley, A, (1998b) "Obuchi wraps up a package to help the banks" in *The Banker*, 148 (873).

Rowley, A, (1998c) "Background to banking turmoil" in *Financial Regulation Report*.

Rowley, A, (1998d) "Bridge plan to nowhere" in *The Banker* 148 (870).

Rowley, A. (1998a) "Japan urged to deal with bad debt problem" in *The Banker* 148 (867).

Sanger, David (1998) "Clinton warns Japan"s government: Stimulate the economy to avoid a long term decline" in *New York Times* (4/4/98).

Stone, Douglas & Ziemba, William (1993) "Land and stock prices in Japan" in *Journal of Economic Perspectives* 7 (3).

The Economist (1998a) "Will Tokyo finally clean house?" (27/6/98).

The Economist (1998b) "Messing with money" (25/7/98).

Wood, Christopher (1992) *The Bubble Economy: The Japanese Economic Collapse*. Sidgwick and Johnson: London.

WuDunn, Sheryl (1998a) "Japan's rising economic peril has political roots" in *New York Times* (5/4/98).

WuDunn, Sheryl (1998b) "Japan has slid into recession, new data confirm" in *New York Times* (13/6/98)

Ziemba, William (1991) "The Chicken or the Egg: Land and stock prices in Japan" in W. Bailey, Y. Hamao, W. Zimeba (eds.) *Japanese Financial Market Research.* Elsevier Science Publishers: Amsterdam.

Ireland's Adoption of the New Policy Consensus

Colin O'Flaherty – Senior Freshman

The new economic policy consensus has been embraced by Irish policymakers as the best route to growth and development. Colin O'Flaherty takes examples from our economic history since independence to explain the emergence of this agreement and analyses how it benefits the Irish economy.

Introduction:

The recent success of the Irish economy seems to have come about in the wake of some paradigmatic policy shifts. This essay seeks to determine whether or not the adoption of this New Economic Policy Consensus (NEPC) has been good for Ireland by examining our economic history between 1921 and 1993. The description of NEPC with which I intend to work is provided by McAleese. He describes the it as consisting of three pillars:

1st Pillar: An increasing emphasis on the use of market mechanisms to achieve objectives rather than supplanting them with state intervention.

2nd Pillar: Macroeconomic policy is now orientated more to ensuring a stable economic framework rather than achieving proactive counter-cyclical targets or national plan growth rates and investment targets.

3rd Pillar: National policies have become more outward-looking, as is evident by the successful completion of the Uruguay Round, the steadily increasing membership of GATT, the relaxation of controls on capital mobility and the globally more benign stance towards foreign investment.

McAleese tells us that economic policies throughout the world are converging in the mid-1990's around these three basic principles. It is my intention in this essay to firstly show, very briefly, that by 1993 Ireland had signed up to these principles and then more importantly to show, by reference to examples from our economic history in the period 1921 to 1993, that we were right to 'sign-up' to this consensus.

The 1st Pillar

By 1993, Ireland had undoubtedly moved towards 'smaller' government. Privatisation and deregulation were by then important words in Irish economic circles. The deregulation of the airline market in 1986 and the privatisation of major enterprises such as Irish Life act as proof of this. Even in the public sector, market-type activities such as tendering for contracts were becoming more common. Also, moves were afoot to reduce taxes to help create a more enterprise friendly environment. Indeed the 10% Manufacturing Tax made Ireland somewhat of a tax haven for certain organisations. Income tax cuts were also evident.

Why are such moves good for Ireland? (Examples from history)

There is no doubt that deregulation is good for Ireland after the 1986 airline market deregulation. This lead to much cheaper air fares for Irish consumers and more importantly helped boost Irish tourism. Any jobs which were lost in Aer Lingus were more than compensated for by the increase in employment not only in competing airlines, but throughout the revamped tourism industry. The above illustration proves the point that markets perform more efficiently if there is competition.

The benefits of privatisation to the Irish economy may not be quite so clear cut because the State Sponsored Bodies (SSBs) which started as far back as the 1920s were generally successful agents of economic development especially (in Jonathan Haughton's words): "in the first few decades after independence, when the private sector did not appear to be very enterprising".

However, I believe that by 1993, enterprise was far more evident in the Irish economy than before and it is for this reason that the state correctly saw fit to privatise major organisations. Indeed again taking material from Haughton, Ireland, it could be said, had by 1993 become much more aware of the outside world with an

open-mindedness reinforced by our membership of the European Union, and with a sophistication which was previously undreamed of. SSBs were no longer as necessary as before and the large sums of money realised by the sale of SSBs could be better put to use in other ventures.

Finally, as regards the 1st Pillar, there is no doubt at all that a reduction in taxes is good for the Irish economy. There are many reasons for this, but the primary one would have to be the reduction in economic distortions in the employment market which comes with such a move. Between 1984 and 1993 the employment rate never fell below 13%. A rigid labour market, where the incentive to work was weak due to high unemployment benefits and high marginal tax rates did not help solve the problem. New measures were needed and a fall in taxes leading to a decrease in the tax wedge can only be good for Ireland in her effort to solve the scourge of the 1980s and 1990s – unemployment.

The 2nd Pillar

The second pillar consists of two main sub-sections. That is to say that macro-economic stability consists of price stability on the one hand, and fiscal stability on the other. Ireland had by the mid-1990s undoubtedly signed up to these principles, if for no other reason than to be eligible to join EMU. After all, the criteria for such membership included low inflation and a budget deficit not exceeding 3% of G.D.P; another key element of the Maastricht Treaty was that public sector debt must be approaching 60% of G.D.P. On both of these aspects, Ireland was making giant leaps.

Why were such moves good for Ireland?

If the 1980s were perhaps the key decade for proving the importance of the 1st Pillar, we need only go back one decade further to see the importance of price stability and the implementation of a stable economic framework rather than using proactive counter-cyclical Keynesian measures. The key difficulty in adopting demand-stimulating policies is knowing when to stop; i.e. when such policies are no longer necessary or useful. Ireland in the 1970s was a case in point. The recession caused by the 'oil shock' in the early 1970s passed a few years later, but the Irish government did not discontinue their use of Keynesian policies (which had initially helped prevent economic crisis) because they worried about unemployment.

By the late 1970s, counter-cyclical measures had become pro-cyclical and as always the costs came with a lag. Heavy government borrowing used to stimulate demand through increased public expenditure led to a huge increase in the debt to GDP ratio from 52% in 1973 to 129% in 1987. The result was a huge increase in taxes to try to gain the revenue to pay back even the interest on the debt. The resulting disincentive effects such as high tax rates helped exacerbate the very problem which the government had tried to solve in the 1970s – unemployment.

This was further compounded by the fact that workers naturally saw tax increases as justifying nominal wage increases, thus making Irish labour less attractive to employers. Only with huge drops in government spending and strict wage restraint were the problems eventually lessened. However, even as late as 1993, unemployment had not recovered – a strong ratchet effect was evident.

Undoubtedly prioritising low inflation (or price stability) is needed if we are to have stable fiscal policies. However this requires lower government spending. Otherwise we risk returning to the days when high government spending expanded the economy and brought about inflation. With inflation comes increasingly vociferous calls from employees and their trade union representatives for wage increases which will maintain the value of their wages in real terms. If such calls are heeded (and it is often difficult in times of rising prices for a government not to heed them) the economy can quickly spiral into a vicious cycle of low competitiveness. Such a cycle is difficult to escape from. The helpful effects of a return to fiscal rectitude could be clearly seen in the Irish economy in the late 1980s and early 1990s as the ratio of debt to GDP fell, primarily as a result of lower government spending, and a period of robust economic growth dawned on the Irish economy.

The 3rd Pillar

There can be no doubt that Ireland has fully espoused the need for free trade between world economies. Our eager membership of the European Union and indeed of the GATT shows this more clearly than any number

of words can. Likewise, the hugely important role played by foreign direct investment (and the encouragement given to it by the aforementioned 10% manufacturing tax) have proved crucial in the development of the Irish economy and our subsequent economic boom.

Why are such moves good for Ireland?

Let me begin this argument with a point that could quite possibly also be used with reference to either of the preceding pillars. Ireland is a very small open economy. We must follow world trends because we do not have the strength to go against them. At any rate, the Irish market is so small that greater efficiency of production by Irish companies requires Irish access to foreign markets and this can't be achieved if we deny others access to our market through tariffs.

We attempted to initiate self-sufficiency in the 1930s and it didn't work. For one thing, import-substitution ran its course as early as 1936. There is only so much the Irish economy is capable of producing, particularly without importing foreign raw materials. For Irish business to be successful we need access to certain inputs, such as coal or oil for example, though the list is almost endless. For the most part these inputs need to be imported. Let us not be fooled. No other country in the world will provide us with the necessary inputs for our productive factors if we do not allow their exports access to the Irish market. It doesn't matter that the Irish consumer base is small, it is a point of principle.

Also, like in the previous example, the costs of the 1930s came with a lag, and much of the blame for the gross inefficiency of the industrial sector in the 1950s has been attributed to factors which developed during the 1930s. As I alluded to previously, efficiency comes with competition. A stand-alone Irish economy, as the 1930s showed, can't provide such competition. Quite simply our markets are too small. Between 1938 and 1943 Irish exports fell by a half, and imports fell even more. Industrial employment also fell, primarily as a result of the scarcity of raw materials which thus restricted the range of production opportunities open to Irish producers.

Furthermore, Irish entrepreneurs and businessmen were left with no way of expanding their business in a restrictively small Irish economy. The reason for this is to do with the issue of economies of scale. Irish producers producing solely for the Irish market will not be able to avail of such economies of scale, which come with producing large quantities of products. Such large quantities of products will obviously only be viable if one is serving a large market; the Irish market for most products is not of sufficient size to enable many producers to benefit from the said economies of scale. We need to be selling abroad - we need a larger network of buyers.

Finally such a policy stance will leave the Irish consumer with relatively little choice as a result of the drop in imports, which it may also be said leads to higher prices. The reasons for this are obvious. The greater the variety of products we import, the greater the choice provided to the Irish consumer. Also the greater the number of products entering the Irish economy, the less risk there is of demand exceeding supply and thus driving up prices.

Some people have suggested that short-term protection for infant industries can be a good thing but here again this is controversial. There is always the risk that this might breed inefficiencies which will only be discovered when the industry in question is eventually subjected to international competition. As J.J. McElliott put it in the 1920s when warning of the danger of protection: "To revert to free trade from a protectionist regime is almost an economic impossibility".

Another reason for the adoption of free trade is the beneficial role which export led growth played in the Irish economy in the 1960s. Haughton tells us that this policy of export led growth stood on two legs – trade liberalisation and the attraction of foreign direct investment.

Trade liberalisation called for the reduction of tariffs - which made inputs dearer and thus inhibited exports, which became more costly to produce as a result of increased prices for imported raw materials.

Foreign direct investment, on the other hand, helped to bring new skills to the country and also helped increase overall investment in the economy. Indeed by 1974, many foreign companies had set up in Ireland and new industry accounted for 60% of industrial output.

Conclusion

I conclude merely by saying that Ireland is right to adopt fully the new Economic Policy Consensus. Only by doing so can Ireland hope to succeed in the future, as evidence (outlined above) from the past clearly shows. In the immortal words of Santayana: "Those who ignore history are condemned to repeat it". I therefore urge the Irish policy-makers to learn from the evolution of Irish history with regard to the three broad themes outlined above. Let us not in the future repeat the mistakes of the past.

Bibliography

Haughton, J. (1995) "The Historical Background" in O'Hagan, J.W. (ed.) (1995) *The Economy of Ireland.* Gill and MacMillan: Dublin.

McAleese, D. (1995) *Economics for Business.* Prentice Hall: London.

Urban Change In Dublin

Susan Butterly – Senior Sophister

Susan Butterly examines some of the significant changes in the composition of the core and peripheries of Dublin in the 20th century, and the policies that led to the current economic and demographic makeup of these areas. She then looks at some of the problems this poses for urban planners and at the success of the solutions implemented in response.

Introduction

The emphasis placed on urban renewal in Dublin's inner city in the 1990s has resulted in many significant and obvious economic, demographic and social changes in the areas targeted. Indeed, Dublin City has seen many significant periods of change and development throughout this century. The pattern of this change has been characterized by a decline in its "core", paralleled by a massive and rapid growth in its peripheries and then more recently a revival of its core. Thus, this essay will primarily describe and explain this pattern of change, while attempting to highlight certain problems arising from these changes, and will finally assess policy initiatives taken to deal with the problems which have arisen. For the purposes of this analysis, I am taking the "core" to be the historic area within the canal ring. With regard to the "peripheries", I will be largely concentrating on the ‘New Town' areas to the west of the city with specific examples being drawn form the Tallaght experience.

In 1926, the historic area within the canal ring contained 268,851 people, which equated to 84.9% of the total population of the city or 50% of the total urban population of Dublin. After this date, the population began to decline, marginally at first but at a successively faster pace in succeeding decades with the electoral register of 1979 indicating the population had fallen as low as 70,000. During this period the population of Dublin as a whole had increased steadily, from 419,000 to 983,000, indicating that population increases occurred outside the core area. Concentrating solely on population movements belies, however, the true depth of the myriad changes that occurred during this period. These included such factors as shifts in industry, employment opportunities the demographic structure and, less tangibly, changes in peoples' perceptions, especially in relation to the core area within Dublin. Nevertheless, figures for population change do provide a most striking and telling proxy by which to measure the decline or growth of various areas within the city, though other factors will of course be incorporated into this measure. Unsurprisingly, explanations for the decline in the core areas and the parallel and dramatic increase in the periphery areas can be broadly categorised into two sections, market induced, and policy induced which I will deal with first.

Government policy aimed towards dealing with the rehousing needs of Dublin's core is not a new idea. Indeed some of Dublin's older local authority areas date from the 1920s and were constructed with the aim of rehousing families from poor conditions in the older tenemented parts of the city. The alleviation of the historically crowded conditions required a massive housing drive and inevitably led to the suburbanisation of much of the former tenement population. However, it is policy of the last few decades which has been of most significance with regard to the economic and demographic implications for the areas involved, and in particular policies initiated during the 60s which arguably had the greatest impact on shaping the modern peripheries of Dublin.

The framework for the long term expansion of Dublin was derived broadly from Myles Wright's 1967 report on *The Dublin Region* which was implemented through the Dublin County Development Plan, 1971. The aim here was to build four ‘New Towns' to the west of Dublin - Tallaght, Lucan, Clondalkin, and Blanchardstown - as well as facilitating further expansion in the northern and southern suburbs. As had been the case with similar policies previously implemented with varying success in Britain, France and the US, the logic of building these ‘New Towns' was based upon Ebenezer Howard's original theory proffered in 1898, and adopted by Patrick Abercrombie in *The Greater London Plan* of 1945. In keeping with the original idea of Howard, these new towns were to follow a cellular structure of about 5,000 persons within easy reach of amenities such as schools, shops and churches. Attention was to be paid to both through traffic so as to ensure safety, and also to the nearby provision of work opportunities. The areas were to cater for the

continued rehousing of core area as well as for second generation families from older local authority suburban estates.

The most immediate result of the new town policies was a ‘mushrooming' of these areas to the west of the city, being transformed from greenfield sites in 1970 to large urban estates in 1979. If we take the example of Tallaght, it can be seen that it grew from being a small village in 1966 to having a population of 32,000 in 1976. It currently stands at close to 90,000. During this period, the core declined further, falling from 85,638 in 1971 to 70,000 in 1979. Other policies contributed to the shift in population towards the periphery: for example the implementation of rates remission on new houses up until 1977, and also the stamp duty remission on new houses, both of which encouraged the building of new houses in the periphery areas. It is more difficult to assess the degree to which the latter policies affected the growth of the periphery regions, but the notable increase in building subsequent to their implementation seem to suggest they were of significance. Some decline in the core is also attributable to compulsory purchase orders.

Market and other non-specific factors also contributed to the decline of the core and the rise of the periphery areas in recent decades. With respect to land, the prices of land within the inner city were simply too high to sustain housing development. As the NESC have noted, "*high land values tend to require high values and leave little room for less efficient...uses of land".* Thus the large-scale developments of local authority houses required were simply not economically viable within the core area. There were also continued losses in industry to the core area during this time - the traditional industries of the core had been brewing and distilling, food production and some textile manufacturing. Many sought new sites around the peripheries, raising large sums of capital for the sale of their land. New technologies were also rendering obsolete the usefulness of the indigenous population within manufacturing industry who were largely unskilled and often viewed merely as ‘hands,' as their tasks could increasingly be more efficiently carried out by new technologies. Also, despite attempts to redress the situation in the 70s, the docks were no longer a large employer within the core.

A noteworthy development during this period was the growth in office building in the city centre within areas that had previously been residential, such as Fitzwilliam Square and Merrion Square. These were now taken over by commercial and professional proprietors with, for example, a large number of professional services such as solicitors and doctors being located within the Fitzwilliam Square area. According to the NESC, the decline of traditional industry and the growth of commercial and professional services led to a "*contracting job market for the less skilled",* a term which fairly accurately describes the work force of the indigenous core population. This could be viewed as part of the overall trend towards service employment within the Dublin region, mirrored of course both nationally and internationally. Other factors have contributed to the decline of the core during this period: for example the increased mobility brought about through widespread car ownership allowing people to live on the peripheries and even beyond, and still feasibly commute to work in the city centre. People's perceptions of the lack of desirability of living in the inner city due to problems of crime, poor physical surroundings, poor housing, and low expectations of life chances also contributed to the area's demise.

Such rapid urban change inevitably led to the rise of various complex problems. The reality of the situation as far as the core was concerned was that the decline of the area simply did not bring about improvements for those left behind. As far as development within the periphery was concerned, the manner in which it was implemented seems to have caused an abundance of its own problems. Therefore I would like to deal briefly with a number of problems which have arisen particularly within the periphery region, using the area of Tallaght as a specific example.

It has been said of the new suburbs that *"these areas seem to have a prevalence of social and economic conditions reminiscent of those constituting the inner city problem".* This is hardly surprising considering a large proportion of the population of these new areas had either been previously resident in the inner city themselves, or were the sons or daughters of people who had moved from the inner city to older local authority areas. Unfortunately certain problems such as high levels of unemployment, poor educational attainment, poor life expectations and innumerable other socioeconomic factors seemed to have moved with the populous. Drudy and Punch attribute this largely to "*insufficient attention to detailed land use, transport, economic and social planning'.* There was also some confusion over who was to take responsibility for which aspect of the development within these new areas, which arguably influenced the manner in which problems were perceived and dealt with by policy makers for many years. For example, Dublin Corporation had built

4,500 new houses in Tallaght by 1986, but responsibility for the provision of services fell to the County Council. Due to under-funding within the County Council, development of the necessary amenities was unable to proceed at the pace required to keep up with housing developments.

Shortsightedness led to the inadequate provision of public transport facilities. It had been deemed likely that the private car would soon take over, but the reality was a large number of the population remained car-less. This led to a situation whereby many residents were left with difficulties in trying to carry out simple tasks like doing the shopping, and visiting relatives and friends they had left behind. It also put the possibility of commuting to work beyond the grasp of many of the inhabitants. Although industrial estates were built by the Irish Development Authority (IDA), for example in Kilnamanagh, Belgard and Greenhills, the employment opportunities provided were not sufficient to meet the requirement s of the rapidly expanding population. Also service-type firms offering greater employment opportunities were given insufficient attention at the time. Little attention was given to the provision of cultural or recreational facilities contributing the overall bleakness of the areas which was compounded by their own physical appearance - the oft cited ‘prairies' of Tallaght highlighting the haphazard nature of the planning. Thus in short, although these new periphery areas grew at a phenomenal pace in terms of population, lack of coherence in their planning brought about a huge number of social and economic problems.

Problems attributable specifically to the decline in the core over the past few decades are more difficult to decipher as many apparent problems were previously evident within this area: for example declining employment opportunities, low educational attainment and so on. However the alluded to decline can undoubtedly be seen as accountable for a certain number of problems. For example it was largely the younger portion of the population who moved away from these areas therefore leaving behind a proportionately older population less capable of fending for itself. As would be required to fulfill the aims of the new town scheme, the depopulation of the core area was not coupled with an improvement in the conditions for those who were left behind, in fact it has been seen to have contributed to its decline. The move of industry to the peripheries coupled with the growth of office space and information based services has given rise to the curious situation in which the inner city residents fail to find work or may even commute outwards while thousands of incoming commuters clog the city streets. Thus while the population and old industrial and social structures within the area declined, there was a failure to redress the problems of the core which led to the existing poor social and economic conditions to be maintained.

However, more recently there has been a growth in the core area almost as dramatic in nature as that witnessed in the west of the city over the past few decades. Again there are various forces which have contributed to this growth, but the initial impetus was certainly policy-driven. As the success of certain policies has become apparent, the forces of the market have in themselves become driving forces in its development. I would therefore like to briefly explain the origins of this recent revitalization of the inner city, or specific areas of it, after which I will highlight some of the problems pertaining to this rapid growth.

The first Urban Renewal schemes were introduced in Dublin in October 1985. They were initiated in response to the increasing problem of dereliction and dilapidation, not only in Dublin, but in other major urban centres. They covered five areas of inner city Dublin amounting to 77 hectares (later extended), with the Temple Bar area being added in 1991. Between the period 1986 to 1995, an estimated £306.2m was invested in areas designated for urban renewal, with further considerable investment planned for the future. Although initially the focus of these schemes was on business/commercial development, much recent development has been orientated towards residential schemes. The primary incentives introduced have been tax-based.

In many senses these initially policy-driven schemes have induced overwhelming success. In the business sphere, there are two contrasting stories which are testament to this success, that of Temple Bar and that of the Customs House Docks Area (CHDA). As aforementioned, the Temple Bar area was drafted into the scheme in 1991. Since then it has become an important cultural and tourist centre, housing for example the Irish Film Centre and the Temple Bar Arts Centre as well as many colourful pubs, clubs and restaurants, while maintaining its old fashioned cobbled streets and old buildings. Investment in Temple Bar has come from direct public sector funding and co-funding under European Union projects. 72% of the investment generated has been in refurbishment of existing premises, and development has been remarkably coherent due to the Temple Bar Framework Plan and Temple Bar Renewal Ltd.

In contrast development within the CHDA was largely geared towards the building of the Irish Financial Services Centre (IFSC). According to studies undertaken, this could be seen as a prime example of initial investment in infrastructure by authorities inspiring confidence and leading to further market driven investments. The result has been the development of large-scale, high-grade offices, facilitating an unprecedented growth in the financial services sector in Dublin, and attracting such large financial institutions as CITIBANK. Employment within the CHDA stands at roughly 3,000. Services within the IFSC also benefit from the 10% rate on corporation tax.

Residential development has also been significant within the inner city. Between 1986 and 1995, 5,350 new residential units were constructed in Dublin. The result has been to attract significant numbers of people to live in the city, frequently in areas that previously had no residential population. Market forces, available incentives and the design of residential units were the considerations in determining the population of the new developments, the majority of which have been one- or two-bedroom apartments. The typical profile of a new occupant is a young person aged 26-44 in full time employment. People termed ‘professionals' comprise the largest proportion of the cohort as far as occupation is concerned, while an estimated 76.7% have a degree or professional qualification.

Thus, overall these schemes would seem on the surface to be monumental successes, and indeed in many respects they are. However they have raised a number of important issues which I will briefly mention, and though not the primary causes of existing problems, certainly have not aided their abatement. It is evident that these schemes have occurred in the midst of the indigenous, underprivileged population aforementioned. However, it would seem that the redevelopment of these areas has not addressed issues central to them, such as lack of suitable employment opportunities, lack of public amenities, education, training and youth development. The indigenous population have notably been largely excluded from participating in the main tax incentive schemes simply because their existing tax liability is too low.

New employment opportunities available either exclude this population on the basis of lack of necessary skills, or else are of a low skill or temporary nature provided by shopping centre developments such as the Jervis Street Shopping Centre. Such employment will not help to break the poverty cycle. Education facilities have not been improved. The new population, although of the socioeconomic position likely to be able to influence educational reforms, are not family-orientated and are therefore unlikely to seek them. The development primarily of one- and two-bedroom apartments, and the lack of open space or recreational facilities have meant that these are developments unsuitable for raising a family. Thus the population is transient, with roughly 82% of tenants in 1995 estimating they would leave within 12 months. There is also the very important consideration that practically all of the residential development has been orientated towards the affluent group previously described. It is consequently unaffordable to the poorer indigenous population, which means as families mature, young people will almost certainly have to move away from their home areas which certainly does not seem to conform to any idea of equity. These are just a few of the many problems, which must be considered within these new growth areas in Dublin's core. Overall it would seem that the main benefactors from the developments have been property developers, business owners and those qualified for employment within the IFSC, and similar developments.

Finally I would like to make a brief review of policies undertaken to deal with the problems arising from, firstly, the huge growth of periphery areas and, secondly, those pertaining to the new growth within the core area. With respect to the former, a range of initiatives has emerged over time that attempts to deal with problems which have arisen. Part of Tallaght, for example, was in 1988 placed under the Designated Area Scheme. This has had the impact of significantly improving specific areas in physical terms. Under this scheme the Square or New Tallaght Town Centre was constructed bringing many jobs to the area. In 1994 the newly established South Dublin County Council located its new premises in the centre of Tallaght, thus giving the area the administrative base necessary if it is to be deemed a town. With the aid of European Structural Funds, various partnerships have been set up with the view to including local communities in development strategies, with a central aim of eliminating social exclusion. The Tallaght Partnership was established in 1991 and the Clondalkin Partnership in 1996. Other initiatives include the NEST (New Enterprise Support Thrust) Programme which helps with the creation of small businesses, and PLATO which helps address the problems of SMEs (Small and Medium Sized Enterprises) within these areas. The South Dublin Enterprise Board was established in 1993 with the aim of developing a strong local economy that is sufficiently wealthy to support its own needs. Other socially linked initiatives include the Social Economy Unit in Tallaght, which forms a co-operative link between private and public sectors.

However despite the physical improvement of the central Tallaght area following the building of The Square, the new RTC, the Tallaght Regional Hospital and many new private business developments, the "overall scale of intervention and the resources devoted to it have been modest" according to Drudy and Punch. Thus the central problems of high unemployment, poor educational attainment, poor life chances etc. remain prevalent. Obviously large-scale private investment is needed to generate wealth within Tallaght and other areas - and this must necessarily come from outside the area. Indeed investment in Tallaght is very much evident at present, however guidelines must be imposed to ensure that such investment will not generate wealth which is outside the reach of the local population as has happened in the inner city. Fundamental to this is the need to increase the levels of educational attainment so that the local population can take advantage of any investment benefits. This would also generate a feeling of self-confidence in the people of these areas which is surely a vital prerequisite for the achievement of indigenous development.

Unfortunately the problems arising from the new growth within the inner cities are too new for policies to be yet developed to redress them. The fundamental problem raised by the new growth of these areas seems to me to be that the new wealth has been concentrated within these areas and the benefits of which accrue to a very small number of wealthy people. This leaves little or no benefits accruing to the original or indigenous inhabitants, which has increased the disparity between the two groups and is to an extent forcing younger members of the indigenous population out of the area. The key element therefore in attempting to address this problem is to look at why the benefits of this new wealth are not being shared by this population. Again it would seem education is a crucial factor as it determines whether people participate in market activities such as certain professions and therefore can attain a level of income or status from which the benefits of a wealthy economy can be reaped. However, the magic wand of education is too often bandied as a ‘simple' solution to what is a most complex problem, and is seemingly not integrated with other pertinent factors. Consequently I think that in both the inner city areas and the newly developed peripheries, a comprehensive look must be taken at all elements which affect life chances, education, crime and housing situations from which a possible solution may one day be drawn. Perhaps the benefactors of the Tiger Economy might see fit, in the spirit of equality, to make a contribution both in terms of funding and expertise towards what must necessarily be a genuinely integrated, socially-inclusive and well funded scheme.

Bibliography

Drudy, P. J. and A. MacLaran (eds.) (1996) *Dublin Economic and Social Trends.* Trinity College: Dublin.

Drudy, P. J. and M. Punch (1996) *Towards a Development Strategy for South Dublin.* Trinity College: Dublin.

KPMG (1996) *Study on the Urban Renewal Schemes.* Department of the Environment: Dublin.

National Economic and Social Council (1981) *Urbanisation: Problems of Growth and decay in Dublin.* The Stationary Office: Dublin.

Mahlon, Apgar (1976) *New Perspectives on Community Development.* McGraw-Hill: Maidenhead.

Rubenstein, James M. (1978) *The French New Towns.* The John Hopkins University Press: London.

Wright, M. (1967) *The Dublin Region: Advisory Regional Plan and Final Report*. (2 vols.) Stationary Office: Dublin.

With A Little Help From Our Friends

Ronan Clarke – Junior Sophister

One of the defining features of the Irish economy in recent years has been the unprecedented level of economic growth. Ronan Clarke asks how much of this is due to EU transfers to Ireland, and concludes that this aid does not always get the credit it deserves.

Introduction

The contribution of the EU to the Irish economy has taken many forms over the past 26 years. The importance of various policy initiatives such as the Single European Market, and Economic and Monetary Union to the Irish economy are widely appreciated. The cultural impact on business, public administration and the social partners is also significant. This essay, however, concentrates on the most tangible and high-profile form of support we have received from Brussels - transfers of money under various initiatives.

The performance of the Irish economy in recent years has been quite remarkable. In accounting for this story of extraordinary growth, the significance of the role played by the EU is often down-played, and understandably so, as confidence in our own ability is surely a vital factor in sustaining this success. Commentators typically cite a mixture of contributory factors, and most often they emphasise past investment in education, industrial policy and favourable demographics.

In addition to demonstrating the significant impact that EU transfers have made here, this essay will seek an understanding of how and why they have been so beneficial. Thus, as well as examining empirical evidence on the impact of the Structural Funds, this essay will attempt to locate the issue within current economic thought on the causes of growth, and seek a more in-depth understanding by making a connection with the issue of aid to developing countries. This essay will conclude that greater recognition needs to be given to the importance of transfers and the ways in which they benefit an economy like ours.

1. Background to Recent Irish Economic Performance

The story of recent Irish economic performance is one of phenomenal growth. Table 1 shows that GNP has grown at rates of between 6.0 and 8.8 percent per annum since 1994. Cumulatively, the economy has grown by around 60 percent in the last 10 years while the average for OECD countries has been below 30 percent. The effect on living standards has been remarkable. According to ESRI forecasts, living standards in Ireland will reach the EU average by around 2005.

Table 1.1 Real GNP - Percentage Increase from Previous Period (average of expenditure and output data)

1991	1992	1993	1994	1995	1996	1997	1998 (e)
2.2	2.3	2.7	7.4	8.8	6.0	7.7	8.0

Source: CSO, National Accounts Data, June 1998

(e) Central Bank estimate, Quarterly Bulletin, Winter 1998

The fruits of this performance are especially evident in employment figures. Between 1991 and 1997 over 200,000 new jobs were created in Ireland, and the total labour force is currently the highest in the history of the state at almost 1.5 million. At the same time, the unemployment rate has been reduced from 15.7 percent in 1993 to 7.7 percent in 1998, and 17,000 people left the ranks of the long-term unemployed in the year to last April.

In addition, a dramatic turnaround in the public finances has been achieved in the last decade. From a high of 116.0 in 1987, government debt as a percentage of GDP was reduced to just 79.7 in 1996. As shown in table 1.2, the increase in economic activity generally has led to higher government revenues through increased tax receipts and for the last three years the budget has been in surplus, a situation without precedent in Ireland in recent history.

Table 1.2 Government Revenue, Expenditure and Borrowing

£ million	Outturn 1995	Outturn 1996	Outturn 1997	Budget 1998
Current Government Revenue	11,667	12,954	14,619	15,497
Current Government Expenditure	12,029	12,662	14,015	14,388
Current Budget Deficit (Surplus)	362	(292)	(604)	(1,109)
Exchequer Borrowing for Capital Purposes	265	729	839	1,198
Total Exchequer Borrowing	627	437	235	89

Source: Central Bank, Bulletin Winter 1998

2. The Nature and Size of EU Transfers to Ireland

Table 2.1 Ireland's Net Receipts (IR£m) from the European Union

	1985	1990	1994	1995	1997 e
ERDF	76	225	306	358	352
ESF	141	128	321	256	314
FEOGA guidance	56	94	170	143	201
FEOGA guarantee	837	1,287	1,300	1,150	1,300
Cohesion Fund	n.a.	n.a.	145	102	137
Other	18	7	13	14	27
Gross Receipts	1,128	1,741	2,255	2,023	2,332

Source: adapted from McAleese and Hayes (1995), O'Muircheartaigh (1997)

The benefits of EEC membership began soon after Ireland joined in 1973. Receipts under both the European Regional Development Fund (ERDF) and the European Social Fund (ESF) made a significant impact over

the first decade or so. In 1988, however, transfers received a major boost when payments were rationalised and increased in the form of Structural Funds. The Structural Funds encompassed the ERDF, the ESF and the guidance section of the agricultural fund FEOGA.

The rationale for the Structural Funds was a consensus among member states at the time that some would benefit more than others from the proposed Single Market and EMU projects. For countries such as Ireland it was acknowledged that, given factors such as the absence of innovative sectors and limited scope for exploiting economies of scale, some form of compensation was justified. Also, by targeting areas such as infrastructure where regional imbalances could potentially be overcome, transfers were seen as vital to promoting economic convergence, which was highly desirable for all participants in the single market.

Two Community Support Frameworks (CSFs) have provided the basis for programming and distributing structural funds in the last decade. The first CSF covered the period 1989-93 while the second ran from 1994-99. In addition, Ireland has received payments from the Cohesion Funds since 1994. In terms of examining the impact of transfers on the current economic boom, the two CSFs are highly significant. Table 2.1 shows that the combined payments from the three relevant categories (ERDF, ESF and FEOGA guidance) jumped from £273 million in 1985 to £797 million by 1994 and reached £867 million by 1997.

Structural funds are targeted at four main areas: investment in physical infrastructure; development of human capital through education and training; production and investment aid to the private sector; and direct income support. According to Honohan, the largest beneficiaries of the 1994-99 allocation of structural funds were infrastructure and human resources with 36.3 percent and 28.4 percent of total spending respectively.

Although the structural funds are clearly important in themselves, in all the years surveyed in table 2.1 they represented total payments substantially less than those received under the FEOGA guarantee fund, more commonly known as the CAP price and income supports. The enormous significance of EU support of the Irish agriculture sector is highlighted by the fact that in 1996 income from farming was £300 million less than the value of direct transfers.

The combined impact of the structural funds and CAP support is highlighted in table 2.2. Although transfers peaked in the early part of the decade their impact is still substantial, representing 3.2 percent of GDP in 1997. Considerable uncertainty surrounds Ireland's long term entitlement to such large payments from both sources, but it is clear that in attempting to explain the economic boom in the 1990s, the role of Brussels warrants careful investigation.

Table 2.2 Transfers from and Payments to the EU, % of GDP

	1992	1993	1994	1995	1996	1997
Transfers from EU	**5.4**	**5.4**	**3.8**	**3.8**	**3.4**	**3.2**
Agricultural funds	4.2	3.8	3.7	3.3	3.0	2.8
Structural funds	2.4	2.8	1.5	1.9	2.0	2.0
Payments	**-1.2**	**-1.4**	**-1.4**	**-1.4**	**-1.3**	**-1.2**

Source: OECD, Department of Finance, presented in OECD Economic Survey, Ireland 1997

3. Measuring the Impact of Transfers on the Irish Economy

The impact of transfers on the Irish economy has been the subject of several major studies. Most notably, the ESRI's Medium-Term Macromodel has been applied by Bradley, Honohan and others to measure the impact of the two CSFs at different stages. Typically, the short-term effect on aggregate demand is considered separately to the longer-term effect on the supply capacity of the economy.

The immediate demand impact operates mainly through increased spending on non-tradable services and construction sectors and its multiplied effect on aggregate demand is relatively easily measured. The longer-term, supply-side effects operate through an increase in the productive capacity of the economy by enhancing the productivity of workers and the profitability of firms. FitzGerald reports the most recent ESRI findings as suggesting that the cumulative effect of both demand and supply impacts is between 2.5 and 3 percent of GNP by 1998-99.

Meanwhile, the balance of payments surplus is estimated to be 1.2-1.7 percent higher and the government surplus (negative borrowing) almost 1.5 percent greater due to the structural funds. Some 30,000 additional jobs are estimated to have been created up to 1997 and the combined effects of both CSFs, after the initial demand impact fades out, will be to increase GNP by over 2 percentage points in the long-run.

These results have, according to McAleese, surprised many observers by their modesty. It could be that the full impact of the extra expenditure is not felt in the domestic economy. Beutel has found a multiplier associated with the second CSF of 0.692, implying substantial leakages. However, this does not explain the entire shortfall and it is likely that shortcomings of the various studies, often acknowledged by the authors, have contributed to an underestimation of the true impact.

Barry points out that the surveys generally employ conservative estimates of the externality elasticities identified in each case. This criticism applies only to the externalities that have been taken into account and it is certainly the case that many more positive effects of the structural funds are omitted, not least because their effects are simply not quantifiable.

The CSFs introduced long-term horizons to public planning and more rigorous methods of evaluation of public spending. Furthermore, they have undoubtedly created a positive image of the EU in the Irish public's eye, thus generating a positive approach to other EU initiatives such as EMU. It is also arguable that the very evident efficiencies and productivity gains associated with EU-supported capital investments has had a positive demonstration effect on the public, making it more acceptable politically in the long term to prioritise public investment over other spending requirements.

There is a tendency for some commentators to downplay the overall importance of the structural funds in creating the current economic boom. Fitzgerald, for instance, attributes to them a "minor, though important, role", while Duffy et al is inclined to believe that the Single European Market will have a more significant impact in the longer term. Yet it is possible to argue that the structural funds have played a major role in sustaining many of the other factors that are repeatedly highlighted. For instance, the increased exchequer receipts and reduced demands on government revenues associated with the transfers have surely boosted the government's ability to compete on tax terms for foreign direct investment.

What is generally acknowledged by most commentators is the importance of the timing of the two CSFs in creating the prosperity of the 1990s. In particular, the first CSF came at a time of long-delayed fiscal retrenchment and was met with "a backlog of postponed projects" according to Honohan, and eased the pain of reform in the late 1980s by making fiscal responsibility more palatable.

The enormous impact of CAP expenditure, meanwhile, is less controvertible. In the period 1990-95 receipts from the FEOGA guarantee section equated to about 53 percent of gross agricultural product at factor cost according to Kearney. In addition, it must be considered that the CAP has indefinitely postponed for Ireland the need to implement serious and costly structural reforms of agriculture sector.

4. The Theoretical Context

The approach taken to assessing the impact of transfers often involves simply presenting the empirical evidence relating to Ireland in isolation, and rarely involves establishing a historical or theoretical context. However, there is a lot to learn in economic literature about the effectiveness of aid in stimulating growth and the role of aid in developing countries generally.

Development Aid

It may seem strange in the current economic climate to think of Ireland as a developing country, yet we still have some way to go before we will reach average EU living standards and it is just over a decade since the

National Economic and Social Council described the government's fiscal position as "almost unremittingly grim". From this perspective, we can better appreciate the significant scale of receipts from Brussels. The World Bank estimates that aid flows to middle income developing countries represent, on average, just one percent of GNP of recipient countries.

Furthermore, a significant difference in Ireland's case is that the money we receive is free from the stringent conditionality which attaches to most assistance. Although Matthews points out that the CSF sets out an "elaborate system for appraisal, monitoring and assessment" of projects, the system has no real teeth and hardly resembles the programme of policy reform and austerity measures which is part and parcel of IMF assistance and frequently causes significant reductions in public sector budgets.

Aid and Growth

The rationale for development aid is to help countries overcome structural and other weaknesses and attempt to close the gap with more developed states. However, there is as yet no consensus on a single theory on the role of foreign capital in the growth of less developed countries. Early aid theorists such as Chenery and Stout (1966) adopted the Howard-Domar ‘two-gap' model of economic growth and emphasised the importance of aid in supplementing deficient domestic saving and foreign exchange earnings and thus allowing for greater investment.

Although the aid debate has come a long way since, there is still much emphasis on the importance of supplementing government capital investment. Gasper and Pariera see Ireland as a capital-importing country with significant constraints on financial resources. As such, unilateral transfers help to overcome many problems such as high taxation and borrowing, and in addition they find that public expenditure on infrastructure may ‘crowd-in' greater private investment before concluding that transfers affect GDP growth "substantially and permanently" .

Conclusions drawn by the World Bank on the effectiveness of aid have particular resonance for Ireland. They find that investment in infrastructure can deliver major benefits in economic growth for developing countries but it is important that it expand at the right time to accommodate growth. Frequently, it says, when budgets are tightened infrastructure investment is the first sector to suffer a cutback, yet such investment is vital to renewal of economic growth. This further supports the argument that the timing of the structural funds was vital for Ireland's current success.

Conclusion

It seems likely that, in terms of economic growth, the 1990s will come to be viewed as a golden age for Ireland. The reasons for this performance range from sound long-term economic planning to sheer luck and timing. The impact of transfers from Brussels is often understated yet its true influence is pervasive both in its own right and in its knock-on effects.

Economists have long asked questions about the optimum use of assistance aid to developing countries and Ireland is now a model of success in this regard. Yet we are also unique in the sense that our receipts are very large in the context of world transfers and are also free of the usual strings attached. Although we still have a lot to learn about how aid works best, it is likely that the concentration on physical infrastructure and human capital in the two CSFs has paid off hugely. It is difficult to imagine the current level of success without the marked progress in these particular fields in the last decade.

It now seems likely that adverse changes in the amount of money received by Ireland as a whole from both the CAP and Structural Fund categories will happen sooner rather than later. We are in this sense victims of our own success. Just as we like to believe that our rapid growth has benefited all our European neighbours, so we should acknowledge the major importance of transfers to our economy and pass on the lessons learnt here to other developing countries.

Bibliography

Barry, F, J. Bradley, & A. Hannan (1998) *The EU Dimension to Recent Irish Growth: The Single Market and the Structural Funds.* University College Dublin, Department of Economics: Dublin.

Beutel (1993) *The Economic Impacts of the Community Support Frameworks for the Objective One Regions 1989-93*, report prepared for Commission of the European Communities, April 1993.

Bradley, J, J. FitzGerald, & I. Kearney (1992) *The Role of the Structural Funds: Analysis of Consequences for Ireland in the Context of 1992*. ESRI: Dublin.

Bradley, J, N. O'Donnell, N Sheridan, & K. Whelan (1995) *Regional Aid and Convergence*. Avebury: Aldershot.

Bowen, J.L. (1998) *Foreign Aid and Economic Growth: a Theoretical and Empirical Investigation*. Ashgate: Aldershot.

Cashel-Cordo, G. & S. Craig (1990) "The Public Sector Impact of International Resource Transfers" in *Journal of Development Economics,* No. 32 (1), pp. 17-42.

Duffy, D., J. FitzGerald, I Kearney, & F. Shortall (1997) *ESRI Medium Term Review 1997-2003*. ESRI: Dublin.

FitzGerald, J. (1998) *An Irish Perspective on the Structural Funds*. ESRI: Dublin.

Gasper, V. & A. M. Pereira "The Impact of Financial Integration and Unilateral Public Transfers on Investment and Growth in EC Capital-importing Countries" in *Journal of Development Economics* 48, pp. 43-66.

Kearney, **B**. (1996) "The Agricultural Sector", in Baker, T., J. FitzGerald, and P.Honohan (eds.) *Economic Implications for Ireland of EMU*, pp. 301-305. ESRI: Dublin.

Honohan, **P**. (ed.) (1997) *EU Structural Funds in Ireland - a Mid-Term Evaluation of the CSF 1994-99*. ESRI: Dublin.

Lane, **P**. (1995) "Government Intervention" in J. W. O'Hagan (ed.) *The Economy of Ireland - Policy and Performance of a Small European Country*. Gill & MacMillan: Dublin.

Matthews, **A**. (1995) *The Capital Budget and EU Structural Funds*, paper read to the Foundation for Fiscal Studies Pre-Budget Seminar, February 1st 1995, Dublin.

McAleese, D. & F. Hayes (1995) "European Integration, the Balance of Payments and Inflation" in J.W. O'Hagan (ed.) *The Economy of Ireland - Policy and Performance of a Small European Country*. Gill & MacMillan: Dublin.

McAleese, D. (1998) *Twenty Five Years 'A Growing': Ireland's Economy and EU Membership*, lecture presented to Institute of European Affairs, Dublin, 19th November 1998.

OECD (1997) *Economic Surveys - Ireland 1996-1997*. OECD: Paris.

O'Muircheartaigh, **F**. (1997) "Public Expenditure in Ireland: Evolution and Prospect" in F. O'Muircheartaigh (ed.) *Ireland in the Coming Times - Essays to Celebrate T. K. Whitaker's 80 Years*. Institute of Public Administration: Dublin.

Sachs, J.D. (1997) "Ireland's Growth Strategy: Lessons for Economic Development" in Alan W. Grey (ed.) *International Perspectives on the Irish Economy*. Indecon: Dublin.

World Bank (1994) *World Development Report 1994 - Infrastructure for Development*. Oxford University Press: New York.

World Bank (1998) *Assessing Aid- What Works, What Doesn't and Why?*. Oxford University Press: Oxford.

‘Jolly Green Giant’? Greening Tax Systems For Sustainable Development

Michael Jennings - Senior Sophister

The concept of sustainable development has become increasingly important to economics in recent years. Michael Jennings examines the role of ecological tax reform in resolving the conflict between continuing economic growth and environmental protection. In the long term he sees the costs associated with introducing such a tax as well worth while.

"*Woo ah, mercy mercy me. Ah, things ain’t what they used to be, no, no. Where did all the blue skies go? Poison is the wind that blows, from the north and south and east.*"

Marvin Gaye

"*...mountain high and river deep - stop it going on, - we gotta wake this world up from its sleep, - ah, people, stop it going on...*"

Jason Kay

"*It follows that the aggregate amount of economic satisfaction which people in fact enjoy is much less than it would be if their telescopic faculty were not perverted.*"

Arthur Cecil Pigou

In a world of fully rational consumers and producers, perfect information and complete, general equilibrium markets, any tax system deemed necessary in an economy could attempt to be ‘neutral’, claiming revenue necessary to provide goods and services in an efficient, non-distortionary manner. The market alone would support the spirit of the first two of the quotes above. Unfortunately, as the latter of the three states, this may not be a reasonable assumption. ‘Green tax reform’ may therefore have a part to play in correcting the imperfections of the use of the environment, in consumption and production. This essay presents some more theoretical components of a discussion that exemplifies one of the central tenets of economics: to allocate scarce resources between competing uses.

‘Setting the scene’ – the problem of Sustainable Development

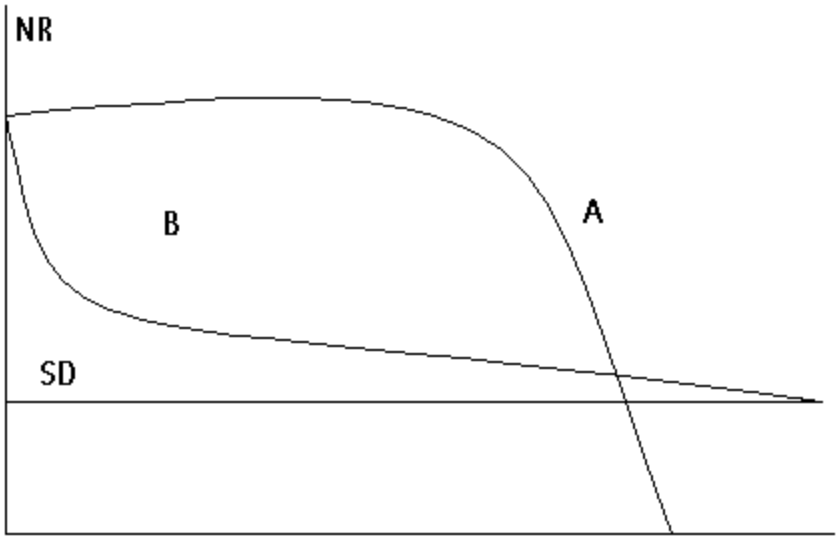
Understanding the concept of long term Sustainable Development is of central importance to the justification of ecological taxation. The argument in favour of some intergenerational redistribution of natural resources, as well as for preserving intact ecosystems, solidifies the case for taxing production and consumption in a non-neutral manner beyond myopic cost-benefit analysis. The following definition highlights the ambiguity of the term:

> "*Sustainable development ... is defined here as a process whereby future generations receive as much capital per capita as, or more than, the current generation has available [....]. This includes natural capital, physical (or produced) capital, and social (including human) capital*".

One of the most important problems in the above is whether the *composition* of capital that is passed on to future generations is of any importance. It is not generally agreed whether perfect substitution between different types of capital is possible if the goal of Sustainable Development is intergenerational welfare maximisation. Notably, the depletion of natural capital in favour of produced capital is questioned in

the ‘ecological economics’ approach. The most extreme form of this approach takes a strongly pessimistic, steady-state view of technological processes and economic growth. It advocates a decrease in the ‘throughput’ of primary resources in industry to reduce depletion and waste. Figure 1 below attempts to depict some of the logic of this view in a simple manner. On the horizontal axis, it depicts an undefined, although not infinite, amount of time. On the vertical axis, a measure termed simply ‘NR’ is used, which denotes the pressure that human, or anthropogenic, processes and emissions place on the environment. Its components are the use of *non-renewable* resources plus use of renewable resources *above their renewal rate*, plus the amount of pollution above the assimilation possibilities of the ecosystem. Therefore, moderate use of NR will be important for the retention of a functioning ecosystem.

Figure 1.



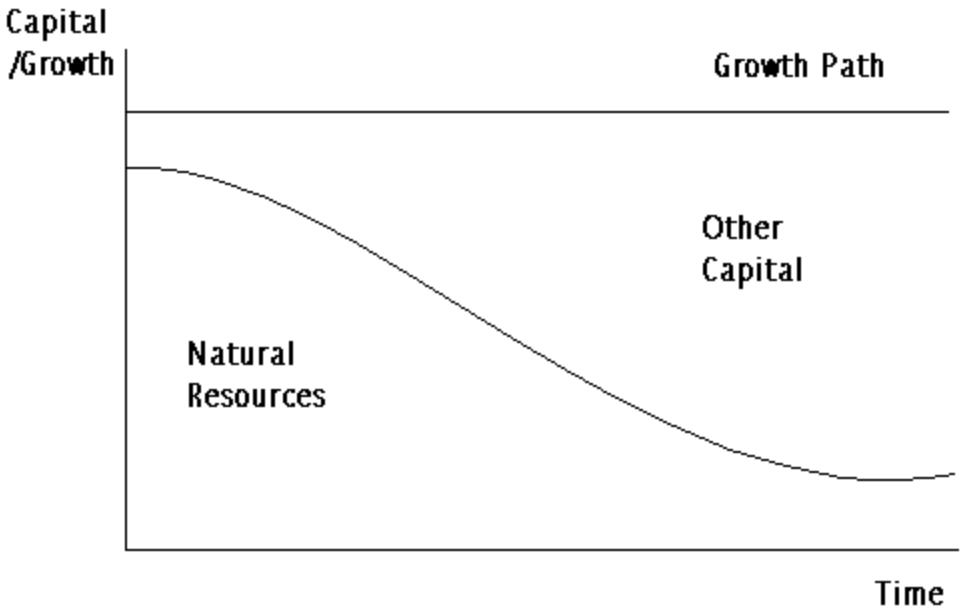
The three curves A, B, and SD then depict three separate consumption possibilities for NR, beginning from the origin, which shall be the current generation. SD denotes some level of consumption of NR that is close to optimal for ecological economists. A level of NR = 0 is hardly feasible, as some resource use is necessary even in a ‘steady state’ with current technology. Consumption would only need to be zero if the time span were indeed infinite, as we would then have to divide a finite amount of non-renewable natural resources by infinity, and any cumulative amount of non-assimilated pollution would eventually reach the critical level for ecosystem collapse.

In the extreme pessimistic view of the ecological economics ‘paradigm’, actual consumption of NR could be considered to follow the path of Curve A. Consumption of non-renewable and/or non-renewed resources, and pollution above assimilation levels, rise with economic growth, until the apex of the curve where NR can no longer be sustained. The most important aspect of this curve is that NR does not then simply drop to some low level, but actually drops to zero. Due to excessive consumption of natural resources as well as pollution above critical levels over a long time period, ecosystems collapse and natural resources are fully depleted. Although there will be negative external effects before Curve A goes to zero, the greatest problems will be experienced by those who have no more natural resources, and face collapsed ecosystems.

The solution above is to induce society to follow the consumption/production path dictated by Curve B. This involves an immediate slowing of over-consumption of

natural resources, primarily through command and control regulation of production and consumption, plus possible market-based instruments as described below, as well as hypothecation. It does not necessarily mean that economic growth must stop, as long as it can take place separate from the use of natural capital. The use of natural capital should then eventually approximate the SD line. Figure 2 shows the opposite case, where the composition of capital is of little importance:

Figure 2. 'Weak' Sustainable Development



As long as natural capital is soundly invested in the growth of other capital, the depletion of natural resources is not considered a problem. This is 'weak' sustainability as opposed to the 'strong' sustainability of the ecological economics approach. No explicit reference is made to pollution here, although it must be considered to be a negative factor to retaining welfare. However, as this 'environmental economics' approach does not explicitly value the ecosystem as such, but only what it provides to the consumers of that ecosystem. It is not intrinsic in itself, but a 'secondary' value based upon the consumer valuations that the environmental economics approach relies upon. Consumers of the environment reveal a willingness to pay for the security of future resource use for themselves and for future generations. This means that natural capital and ecosystems are considered, but as Turner et al point out, this may lead to an underestimation of the value of natural capital:

> "*Ecological economists, on the other hand, are less confident that private valuations arrived at in present market conditions can be expected to take account of all external costs* ".

Most thought regarding the environmental aspects of economic policy moves between these two opposing viewpoints. The 'ecological' standpoint informs us of the necessity for some basic level of sustainable natural resources, as well as emphasising the value of pollution thresholds. The environmental paradigm on the other hand allows us to modify the extreme reduction of natural resource use within finite time spans, and to use consumer valuation in a cost-benefit framework to assess the short term effects of ecological/environmental tax reform.

Within these borders, or paradigms, there are many possibilities for division. Three important stances that may inform policy are:

- *The 'economistic' view* is closest to the simple environmental paradigm, utilising the science of economics and ecological principles to decide on action. Without concrete proof, action is only called for when the likelihood is high that the precautionary principle must be enforced.
- *The developmental view* concentrates on bridging the North-South divide, whereby the developing world must be equipped to address environmental problems through aid from industrial nations.
- *The radical view* adopts the ecological economics focus on the 'planet' as such and on the people within it as part of an 'eco-justice' system in which all actors must be treated with equal care. The precautionary principle informs policy.

The discussion of concrete ecological tax reform should be informed by the scientific reasoning of the economistic approach as far as is possible, and therefore look to the environmental paradigm. However, with the current level of pollution and high burden on ecosystems, the precautionary principle of the radical view may also inform policy decisions. Building on a solid scientific foundation will be important for future decisions in ecotaxation, which will become ever more complex.

What is 'Ecotaxation'?

Definition

Eco(logical) tax, environmental tax and green tax amongst others are names given to the instrument characterised here. We shall ascertain only one definition and description which shall apply more or less equally to any of the terms used in the literature. The Commission of the European Union provides a useful initial definition:

> "*Environmental taxes are taxes with an environmental goal, i.e. taxes aimed at integrating external costs which derive from consumption of the good,* "*environment*"*, into the private costs of the economic agents. Environmental taxes can be levied directly on certain harmful emissions or on products if the use of or production of these products is environmentally harmful (e.g. because they lead to emissions or because in their production non-renewable resources are used)*" .

In another publication, it is further stated:

> "*Apart from the function of raising revenue, they also serve as an incentive for behavioural changes. They are thus often envisaged as an efficient economic instrument for environmental protection*" .

This definition may seem clear. However, we may question what exactly is meant when such measures as mineral oil taxation are not included. In 1995, Ireland gained six per cent of total tax revenue from excise duties on motor fuels alone. Eurostat however calculates figures for environmental taxes in Ireland of 4.0% of total taxation. Furthermore, taxation of petrol also cannot fall under taxes on energy, as these only make up 5.2% of total taxation. This simply shows that assigning various taxes a 'status' is not easy. In the above case, it is possible that Eurostat only include the differential in taxation between leaded and unleaded fuel. However, by the above definition of the tax base of environmental taxes it would be just as valid to include all motor fuel taxation, as consumption of all fuels creates some external effects by polluting.

Taxes vs. Charges?

After considering an initial definition such as the one above, an additional difficulty is the placement of environmental charges. Although these are often loosely named with environmental taxes, they are separate in their design and function:

- *Environmental taxes* are compulsory, *unrequited* payments, usually collected by

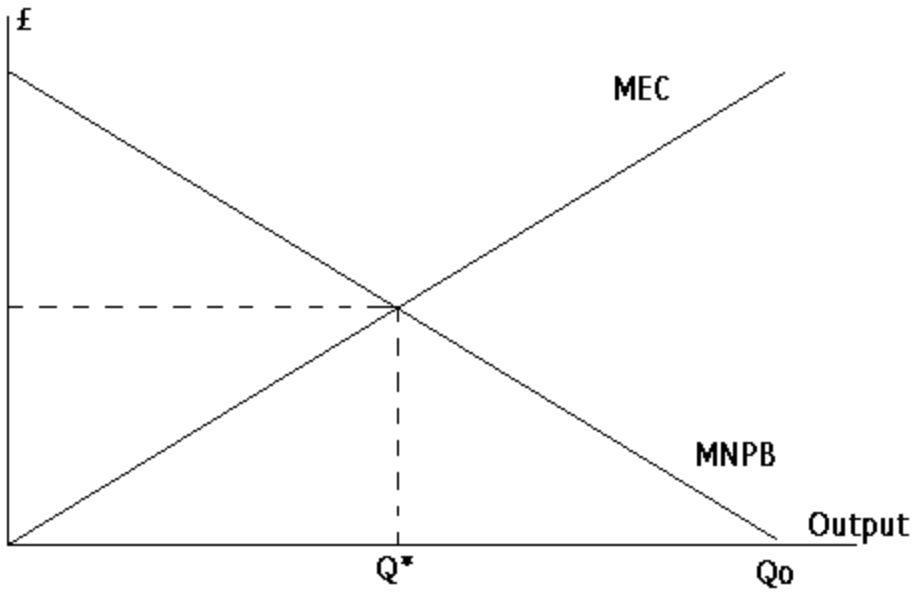
the central government. The benefits to each taxpayer or the collective are not necessarily equal or in proportion to the payment made.
- *Environmental charges* are compulsory *requited* payments, such as sewerage or water charges. They are quite often collected by local authorities, who then provide a service in direct proportion (although the service is usually subsidised by central government) Many services, are still free of charge in many countries, such as water and sewage services in Ireland.

Some environmental charges may fulfil the goals of and motivations for ecotaxation. However, they will only do this if they discourage consumption of the good in question and reflect the true cost of the consumption or production process.

Design

As was shown above, if the level of pollution and resource use is found to cause environmental degradation above a critical threshold, thereby endangering Sustainable Development, then it should be reduced. The classical model for the reduction of external effects through taxation, in this case environmental damage, was introduced by Arthur Pigou. His original idea may be depicted graphically in a number of ways, one of which is explained below:

Figure 3. Taxing for external effects



Source: Barrett (1997), pg.28

Figure 3 depicts the original output decision of a firm, Q^0. This point is chosen as the Marginal Net Personal Benefit (MNPB) goes to zero at that level of output, and the firm maximises profit (MC=P) However, each unit of output also produces an external effect, in our case pollution or excessive use of natural resources as described above. This is the Marginal External Cost (MEC), which increases with output, but is not included in the production decision of the firm. Therefore, a tax at level t* will change the cost structure of the firm, thereby reducing the amount of output where marginal net private benefit remains positive. The new output decision of the firm is Q*, where the benefits of production to the firm equal the costs to society.

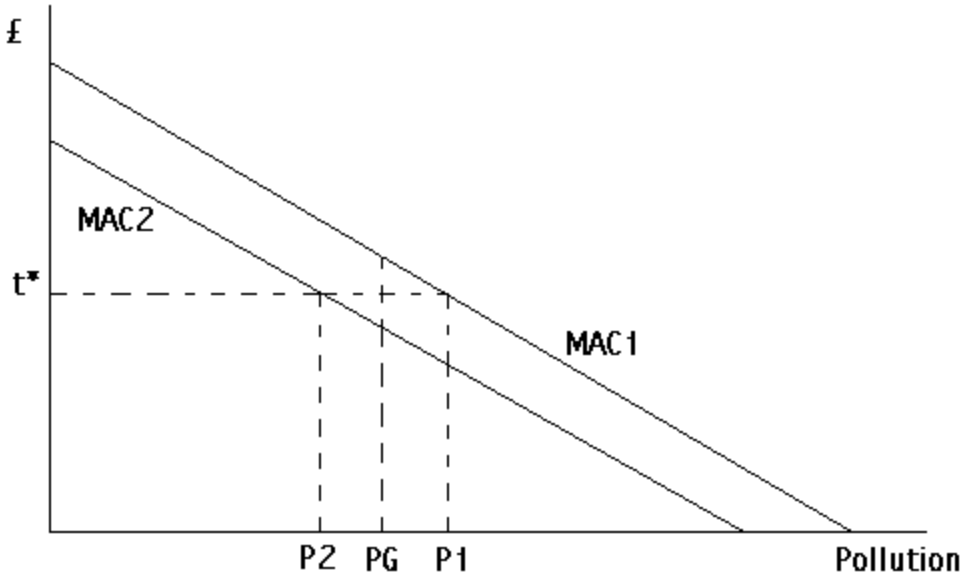
The obvious problem with the Pigouvian tax is how to value the externality, in this case pollution, in monetary terms. It is impossible to determine the exact marginal external costs of a unit of pollution/output, and therefore impossible to set the exact tax rate that will lead to output reduction towards the social optimum. Another problem that should be noted here is that a unit of output or emissions does not

always cause the same damage, depending on the location of the production site, and its assimilatory capabilities. This creates the difficulty of having to tax according to more than one parameter, and necessitates complicated measuring technologies and schemes.

Despite the problems mentioned briefly above (and there are many more), the discussion of Sustainable Development informs us that some level of pollution abatement is necessary. The above suggests an ideal level, although the MEC curve is not explicitly intergenerational. If we adapted it to fit our discussion of SD across generations, then the MEC curve may shift upwards considerably, reducing the ideal amount of production/consumption with a given level of technology. Therefore, an increase in taxation would be necessary to keep intergenerational social costs and present private benefits equated. Obviously, this further reduces present private utility unless adequate means of compensation can be found.

Whatever reduction of pollution or waste is considered necessary, it remains the fact that taxation is the most efficient way to achieve it when different producers or consumers face different abatement costs. Figure 4 shows this clearly:

Figure 4. Cost-effective pollution abatement



Source: Barrett (1997), pg.30

If the government considers a pollution level per firm of P^G to be optimal, a regulation stipulating that both firms in the market, '1' and '2', should only be allowed to pollute up to this level, would not be efficient. As the two firms face different marginal abatement costs, MAC1 and MAC2, the most efficient outcome for a given level of pollution can be reached by firm 2 reducing its pollution to P^2, and firm 1 increasing to P^1. The amount of pollution remains at $2P^G = P^1 + P^2$, but at lower cost. Regulation to this effect would punish firm 2 for efficient abatement processes, and subsidies would not leave incentives in place to abate pollution at minimum cost, while at the same time sustaining marginal firms in the industry. Taxation on the other hand punishes Firm 1 for its higher MAC, and also best fulfils the *Polluter Pays Principle*, which seeks to make each instigator of negative environmental externalities pay for the same. In the above case of two polluting firms a system of tradeable permits to pollute will fulfil exactly the same goals, as Firm 2 can abate at lower cost, and will sell permits to Firm 1 priced just below their abatement costs, which is beneficial to both firms. However, other bases of ecotaxation will be unlikely to have markets for such permits. For instance, the transaction costs of a market for tradeable permits in automobile pollution would be very large in relation to the 'denomination' of these

permits, and therefore not viable. Besides this, enforcement of pollution permits for automobiles would be far too costly.

The ideal solution given our information constraints would then be to set some level of pollution that is compatible with Sustainable Development, and then use taxes (and possibly other market-based instruments also) to reach this level.

What price pollution?

Attempts at costing environmental damage usually involve contingent valuation of the environment and/or monetarising environmental and human capital loss at 'market prices'. Contingent valuation can be defined as:

> "*...a method of valuing the benefits of preserving or improving some asset (such as an environmental asset) on the basis of surveys in which people are asked how much they are prepared to pay to preserve, protect or restore the asset in question*" .

However, besides the usual problems of preference revelation in such questioning, there is the important case for the 'incommensurability' of environmental assets and the environment in general. Respondents may attach some special status to environmental issues, and they are then not easy to reduce to a value expressed in ordinary goods. One component of environmental degradation may be relatively easily valued, namely such things as the effect on crops or landscapes in general, from changes in climate, health risks through particulate matter and many more. The other component is the intrinsic moral and aesthetic value, as well as most importantly the intergenerational value of an intact environment in light of the Sustainable Development discussion. Relying solely on the first component may mean an underestimation of the optimal level of abatement. However, constructing a 'lower bound' through traditional valuation is a positive development, and shall be considered below for two examples. A final caveat here is that the responses to environmental questions are likely to be very emotive, leading to large preference revelation problems.

Climate change

Cost-benefit analysis of climate change is the best example of how difficult valuation actually is. The scenarios brought forward range from a certain *nonchalance*, welcoming increased plant growth and warmer weather in colder climate areas, to disaster scenarios of mass species extinction, flooding, tropical storms and uncomfortable temperature rises in middle latitudes. It is considered likely that over two billion people live in countries that may be subject to high decreases in potential yield due to climate changes. These countries often have low 'food security' and endangered coastal regions.

Maddison uses an economic output model in which Greenhouse Gas accumulation and therefore an amount of global warming occurs. If no abatement takes place then by 2100 global temperature will have risen to 3.6C above pre-industrial levels. The costs of this 'business as usual' strategy are estimated at US$ 8.9 trillion (present value). However, due to the fact that abatement policy is also very costly, pursuing an 'optimal cost-benefit' policy may not bring significant climate change reduction or benefit.

The above results are indicative of a number of other such studies that have been performed. As with others, the author warns of the limitations and uncertainties of the model. Although most of these are considered to be statistical or informational, the Sustainable Development discussion above may also inform us of other shortcomings to look for. The main one is myopia. Although the short to medium term benefits of reductions might be small, indeed negative if we follow a strategy that reduces emissions by a very large amount, abatement may pay off in the long run.

However, this is impossible to estimate from our present day vantage point. Furthermore, even in the short run it is possible that many analyses may be regionally biased, not paying enough attention to the regions that are at the greatest risk from climate change.

Current Health Effects of Pollution

Studies of health effects seem to concentrate on the problems for humans, although depositions of emissions and acid rain will of course effect all flora and fauna. There are obviously indirect effects on health from global warming, which should be captured in estimates such as those mentioned above. However, the danger to health from pollution mainly arises through local substances that pollute water, air and soil, such as carbon monoxide, nitrogen oxides, volatile organic compounds and particulate matter. The two most important sources for pollutants are industrial production and transport, the latter of which is a particular problem for air quality in congested areas. Below is a list of potential effects of vehicle-generated pollutants:

Table 1: Vehicle-generated pollutants and their effects

Pollutant	Effects
Carbon dioxide	Greenhouse gas
Sulphur monoxide	Contributes to acid rain Induces breathing problems
Carbon monoxide	Toxic in confined spaces
Particulates	Soils buildings Heavy concentrations may be carcinogenic
Nitrogen oxides	Contributes to acid rain Can cause throat irritation Contributes to ozone and photochemical smog formation
Volatile organic compounds	Exacerbates respiratory problems Possible link to childhood leukemia Contributes to ozone and photochemical smog formation

Actually monetarising health problems is a different matter entirely. Pearce and

Crowards attempt to assess the number of deaths caused in urban areas of England and Wales by particulate matter (PM_{10}), and then monetarise these. With the two most important variables being the definition of urban population, and the 'dose response function' which measures the number of deaths attributable to a change in PM_{10} concentration, estimates of between 3000 and nearly 10000 deaths through particulate matter were calculated (mainly heart or lung disease). Based on a willingness to pay estimate, they value a 'statistical life' at £1.5m, and therefore estimate costs from mortality alone from anthropogenic PM_{10} particles at over £14bn per annum. To this we can add morbidity effects of illness like the loss of working hours and depletion of human capital, as well as health service costs.

There are many other problems on a local and global scale, for instance anthropogenic pollution of drinking water, which causes waterborne diseases that effect the macroeconomy, but these will not be further discussed here.

Time for action? Many questions...and few answers

It would seem that although it may be very difficult to place exact values on the costs of environmental degradation, these will be considerable. However, the costs of abatement of pollution are also quite considerable. It is indeed the case that a large amount of public and private money may need to be spent without much tangible immediate effect. However, in the long run the concept of Sustainable Development informs us of the need for action. For all but the most urgent problems, market based instruments may be considered to be the most efficient way to ensure that a reduction of environmental degradation by human production and consumption is achieved.

A further point of interest for ecotaxation is the 'double dividend' debate. If environmental taxes are used simply to influence behaviour rather than raise extra revenue for active abatement, then the government may remain close to revenue neutrality by compensating the economy – it can reduce distortionary taxes, such as those on labour. Also, higher taxation of goods such as petrol may create distributional problems, and this should be reflected in the use of extra revenue. The double dividend is then that the tax system sends correct signals to those who misuse the environment, and that distortionary effects in other areas are reduced.

Finally, it may be noted that no unilateral measures can succeed - as Scott Barrett points out that up to a certain point any country that does not participate in abatement will gain from free-riding, and 'leakage' to these countries may mean that abatement will be less effective. Agreements such as the Montreal Protocol on Substance that Deplete the Ozone Layer, or the UN Framework Convention on Climate Change are positive steps, but the degree of enforcement is weak, as with international agreements in any area.

Conclusion

Ecological tax reform can play an important part in correcting the current market imbalances regarding sustainable growth in the global economy. It offers the unique opportunity to collect revenue in a manner that may be considered morally acceptable, and away from distortionary and unpopular taxes such as on income. At the same time, any changes in production and consumption decisions that lessen pressure on the environment promise real medium to long term gains. Potential short term costs, as well as the actual design and multilateral implementation of such instruments present a plethora of difficulties, but rewards are just as plentiful.

Bibliography

Adams, Deborah (1997) "*Greenhouse Gas Controls: the Future of Tradeable Permits.* London: Financial Times Energy Publishing.

Adger, W. Neil (1996) "Approaches to Vulnerability to Climate Change" in *CSERGE Working Paper GEC* 96-05. University of East Anglia: Norwich.

Barrett, Alan, John Lawlor and Sue Scott (1997) The Fiscal System and the Polluter Pays Principle: a case study of Ireland. Aldershot: Ashgate.

Barrett, Scott (1994) "Climate Change Policy and International Trade" in *CSERGE Working*

Paper GEC 94-12. University of East Anglia: Norwich.

Beckermann, Wilfred and Joanna Pasek (1996) "Plural Values and Environmental Valuation" in *CSERGE Working Paper GEC* 96-11. University of East Anglia: Norwich.

Commission of the European Union, Eurostat (1996) *Structures of the Taxation Systems in the European Union.* EUR-OP: Luxembourg.

European Commission (1996) *Taxation in the European Union: Report on the Development of Tax Systems,* (COM/96/0546). EUR-OP: Luxembourg.

Gregory, Ken, Chris Webster and Simon Durk (1994) "Estimates of Damage to Forests in Europe due to Emissions of Acidifying Pollutants" in *CSERGE Working Paper* WM 94-07. University of East Anglia: Norwich.

Johansson, Per-Olov (1995) (5th ed.) *An Introduction to Modern Welfare Economics.* Cambridge University Press.

Johnson, Paul, Steve McKay and Stephen Smith (1990) *The Distributional Consequences of Environmental Taxes.* Institute for Fiscal Studies: London.

Maddison, David (1994) "A Cost Benefit Analysis of Slowing Climate Change" in *CSERGE Working Paper GEC* 94-28, University of East Anglia Norwich.

OECD (1975) *The Polluter Pays Principle: Definition, Analysis, Implementation.* OECD: Paris.

OECD (1992) *The Polluter-Pays Principle. OECD Analyses and Recommendations.* Paris: OECD.

O'Riordan, Timothy (ed.) (1997) *Ecotaxation*. Earthscan: London.

Pigou, A.C. (1960) *The Economics of Welfare.* Macmillan: London.

Pearce, David and Tom Crowards (1995) "Assessing the Health Costs of Particulate Air Pollution in the UK" in *CSERGE Working Paper GEC* 95-27. University of East Anglia: Norwich.

Pearson, Mark and Smith, Stephen (1990) "Taxation and Environmental Policy: Some Initial Evidence" in *Institute for Fiscal Studies Commentary.* 19 Chameleon Press: London.

Rayfield, D., J.W.S. Longhurst, P.S. Ramsden, J.A. Dinsdale, R.M Elliott and D.E. Conlan (1998) "The impacts of road transport on air quality in the Greater Manchester region, UK: policies towards a sustainable transport system." in *The Environmentalist* 18 (1). Chapman & Hall: London, pp. 3-13.

Turner, Kerry, Charles Perrings and Carl Folke (1995) "Ecological Economics: Paradigm or Perspective?" in *CSERGE Working Paper GEC* 95-17. University of East Anglia: Norwich.

Warhurst, Alyson (1998) "Developing a Sustainable Economy: Towards a Pro-Active Research Agenda" in *Environment & Sustainability Desk Study for the ESRC*. http://www.sussex.ac.uk/Units/gec/pubs/reps/dssuseco.htm

Universal Service And The Telecommunications Industry

Richard Doyle - Senior Sophister

With liberalisation of the telecommunications industry has come a host of complex issues regarding efficiency and competition. Richard Doyle focuses on the question of universal service and suggests that it need not suffer in the wake of liberalisation.

Introduction

In countries all around the world, telecommunications markets are being liberalised. Economists view liberalisation as a good thing. It enhances efficiency, thereby lowering costs, which in turn reduces prices. New services are developed and the quality of service is improved. Society experiences a general rise in welfare due to liberalisation. In the overall context of telecommunications liberalisation, there is no obvious reason to expect anything different. However, within one specific area of telecommunications, universal service, the effects of liberalisation are not so clear.

The aim of this paper is to investigate how liberalisation affects the achievement of universal service. First of all is a discussion of the background to universal service. The concept is examined and then the economics underlying universal service, showing how it constitutes a market failure, are examined. The pre-liberalisation situation, that of monopoly provision of universal service, is also analysed. This serves as a benchmark for a comparison to various broad regulatory scenarios in a liberalised environment. These are no regulation, regulatory oversight and prescriptive regulation. Reference is made to countries that have liberalised and the findings of the section are then discussed. Finally, the paper is summarised and concluded.

The scope of the paper is narrower than would be wished. Therefore, the analysis is simplified and employs implicit assumptions. This is entirely due to a desire to cover the necessary background and thereby offer a complete analysis. It should also be noted that the aim of the paper is not to offer any definitive recommendation; rather, its purpose is to discuss the issue in an informed manner.

The Background to Universal Service

What is Universal Service?

Universal service is the concept that every individual, in a given country, is entitled to some basic level of telecommunication service at an affordable price. Though there are more precise and technical definitions, the advantage of this one is its simplicity and clarity. Universal service is a dynamic concept. Its meaning is changing over time, though the definition remains the same. For example, what is considered to be a 'basic level of telecommunication service' today may be voice telephony, whereas in ten years it may include Internet service. Similarly, given the general rise in income, the meaning of an 'affordable price' may also change in the future.

Economics of Universal Service

The economic rationale for universal service obligations is that without them, the market would not provide telecommunications services efficiently. This is due to the existence of positive externalities; without universal service obligations, the socially optimal amount of telecommunications services would not be provided. There are two types of externalities in telecommunications. Call externalities occur because

subscribers receiving incoming telephone calls benefit therefrom (because it adds to their utility), yet pay no cost. Network externalities result from the benefits that new network subscribers confer upon existing network subscribers, without the existing subscribers paying any cost. The existing subscribers benefit because they are now able to call, and receive calls from, one more subscriber. As subscribers' valuation of their utility from network access includes the full value of call externalities, we can concentrate upon network externalities. Network externalities can be illustrated as in the following diagram.

Diagram 1

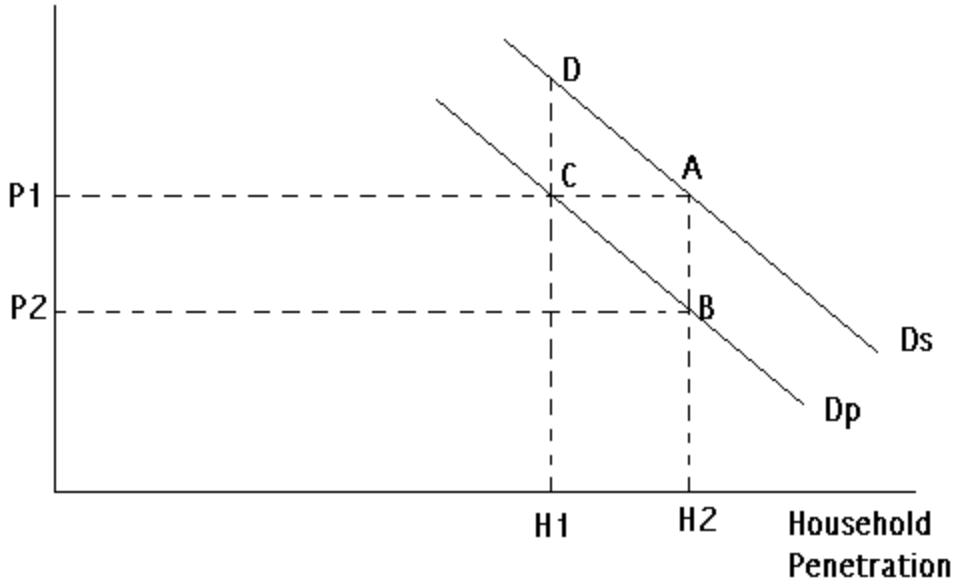


Diagram 1 shows two demand curves in price \ household penetration space. One demand curve reflects private benefits only (D_P), while the other represents both private and social benefits (D_s). They differ because of the existence of network (or access) externalities. At price P_1, the actual household penetration rate is H_1, though the social optimum is H_2. In conflict with the earlier definition, all individuals are not connected at an affordable price. This means that there is inefficiency, represented by area ABCD, due to the presence of network externalities. This inefficiency occurs because subscribers (both existing and potential) do not take account of the social benefits that accrue from a marginal subscriber joining the network and therefore 'social' demand diverges from 'private' demand.

Universal Service in a Non-Liberalised Environment

In a non-liberalised environment, telecommunications services are provided by a monopoly and the telecommunications sector is regulated. Universal service is achieved in this situation. That is, the socially optimal amount of telecommunication service *is* provided and the household penetration rate approaches 100%. This occurs because the monopolist and the regulatory authority reach an agreement on the provision of universal service. This has been termed a 'social contract' in the context of Europe. The idea is that in exchange for the privilege of being a monopolist, the sole operator undertakes to provide universal service. This is done by internal cross-subsidy: the losses that the monopolist incurs from the provision of universal service are offset by the supernormal profits that it makes in other areas. Without universal service obligations, not all households would be connected. In particular, households in sparsely populated areas and low-usage ones would not be connected.

This explains why monopoly and universal service are associated together and, further, why people fear the impact of liberalisation on the achievement of universal service.

Following Cave et al, the case of a country that has not liberalised can be broadly represented by Diagram 1. Consider the imposition, by the monopoly regulator, of an access price of P_2, where P_2 is less than the cost of supplying access, say P_1. At P_2, the socially optimal household penetration rate, H_2, is demanded. Assuming that the monopolist is able to cover the consequent loss with its profits elsewhere, it agrees to price at P_2 and universal service is attained. Cave et al show that the net cost of doing this is given by the area, ABC. It is therefore clear that universal service represents a loss; if an operator is obliged to connect more households than H_1, it loses money.

Telecommunications Liberalisation and Universal Service

General Effects of Liberalisation

A number of regulatory scenarios could be implemented in a liberalised environment. However, before discussing these it is instructive to briefly mention the general effects of liberalisation. First, prices adjust to reflect costs. This is called tariff rebalancing and usually entails the prices of trunk and international calls falling while those of local calls and connection rise. Second, there is a strong incentive for operators to ignore certain groups of customers. These are the aforementioned uneconomic customers. Finally, new telecommunications services are introduced, typically in urban areas. In addition, costs will generally fall, due to the greater emphasis on efficiency.

Measurement of Universal Service

To allow comparison between the various regulatory scenarios, one requires a measure of universal service. Unfortunately, there is no index of universal service achievement, though there are some alternatives. The best of these measures is the number of residential mainlines per 100 households. It corresponds most closely to the household penetration rate in Diagram 2A. Regrettably, the data for this measure are limited. The alternative is the number of mainlines per 100 inhabitants, known as the penetration rate. Table I presents data on the penetration rates for a number of countries. The first three countries in the table liberalised their telecommunications markets over ten years ago, while the latter two have just liberalised.

In interpreting the table, some comments are apposite. First, what is most relevant is the performance *after* liberalisation; that is, how the penetration rate changes after liberalisation. Second, what is the significance of the upward trend in the figures? Is it due to liberalisation itself or do all the regulatory scenarios encourage universal service, independent of liberalisation? Reference will be made to the data throughout the rest of the essay.

Table I

Country	**Mainlines per 100 Inhabitants (1985-1997)**					
	1985	1990	1993	1994	1995	1997

New Zealand	38.5	43.8	44.0	45.1	46.4	48.6
UK	37.0	44.2	47.0	48.6	50.2	54.0
USA	49.6	54.6	57.6	59.8	62.7	64.3
Ireland	19.9	28.1	32.8	34.7	36.7	41.2
Netherlands	40.2	46.4	49.9	50.9	51.8	56.4
Sources: OECD (1997a) and International Telecommunications Union (1998)						

Regulatory Scenarios

No Regulation

The case of liberalisation with no regulation is the first scenario. Earlier, it was shown that without intervention, universal service would not be achieved. However, this only happens if the 'no regulation' scenario coincides with the beginning of telecommunications provision. The much more realistic case is where telecommunications has been provided by a monopoly for a number of years. There is a crucial difference, because in the latter case, universal service will probably have been achieved. The question then becomes: will universal service be maintained after liberalisation?

In New Zealand, there is no industry specific regulatory framework. Furthermore, when liberalisation occurred in 1989, it was immediate and full. There are universal service obligations in the licence of the former incumbent, Telecom New Zealand, but these are not onerous. Disputes are resolved through the courts. Since liberalisation, the penetration rate has risen from 43.8 in 1990 to 48.6 in 1997. Though this is indeed a rise, it does not compare favourably to other countries, both those that have liberalised and those that have not. For example, the performance of Ireland over the same seven years is superior. Similarly, New Zealand does not compare well with the Netherlands. It will be shown that countries liberalising under different regulatory scenarios also performed more favourably.

Regulatory Oversight

A step away from the 'no regulation' scenario is that of regulatory oversight. In this scenario, the regulatory body gives broad guidelines as to the provision and funding of universal service. There is regulation, but it is not prescriptive. The UK is a good example of this regulatory environment.

Liberalisation in the UK occurred in 1984 with the establishment of the British Telecom / Mercury duopoly. British Telecom, the former incumbent, is required to provide voice telephony services to all those requesting it. The requirement does not specify detailed requirements. An important feature of the UK case is that universal service is partially funded by cross-subsidy from industry operators. In contrast to New Zealand, the UK has performed well since liberalisation. Over the period 1985-1997 it outperformed all countries but Ireland in the absolute rise in its

penetration rate, which increased from 37.0 to 54.0. Accordingly, its performance compared to New Zealand's was superior.

Prescriptive Regulation

Prescriptive regulation is the most interventionist of the three regulatory scenarios. As the term suggests, regulation is usually in detailed terms. The obligations of those providing universal service are made explicit. Moreover, these guidelines are monitored closely and enforced.

The USA corresponds to this type of telecommunications regulation. In 1982, AT&T was split up and the process of liberalisation begun. Regulation occurs at both federal and state level. Universal service goals in the USA are certainly explicit; telecommunications service must be provided to primary and secondary schools, libraries and rural and non-profit hospitals. In addition, funding by cross-subsidy is fully unbundled. The system of subsidising particular groups of subscribers is recognised as being complex.

Measured over the post-liberalisation period, 1985-1990, the performance of the USA in achieving universal service goals is nearly as impressive as the UK. There has been a large rise in the penetration rate from 49.6 to 64.3. As with the UK, the performance of the US is superior to all (particularly New Zealand) but Ireland.

Discussion

Given the findings of above, two hypotheses may be proposed. Though these hypotheses are distinct, the evidence the above can support each.

Liberalisation Positive; Regulatory Environment Unimportant

The first is that liberalisation, and the length of time since liberalisation, is what matters. This could be so for two reasons. One is that liberalisation causes costs to fall which in turn means that universal service ceases to represent a loss. This means that monopoly provision must have been inefficient. Monopoly inefficiency would explain why the penetration rates in the liberalised countries are not static. Furthermore, it required the threat of liberalisation to ensure that universal service was being achieved in the liberalising countries.

An alternative is that universal service is not a cost and never was. That is, it is a myth that universal service is a cost; universal service is a victim of regulatory capture. The positive effect of liberalisation is to expose the myth and demonstrate that liberalisation is not 'bad' for universal service. If this is so, then it is a fallacy to suggest that universal service and monopoly are inextricably linked.

Mueller advocates this view, that liberalisation is good for universal service, and gives an example of universal service being achieved in a competitive environment. For both the explanations above, the regulatory environment is irrelevant. The fact that the penetration rates are increasing in all three liberalised countries can be construed as evidence in favour of this argument.

Liberalisation Neutral; Regulation Environment Important

The second hypothesis is that universal service is a cost and the regulatory environment does matter. The differences between the 'no regulation' scenario and the two scenarios with regulation are significant; the presence of a regulatory body does have an impact on the achievement of universal service. The superior performance of the USA and the UK over New Zealand is evidence that regulation, whether prescriptive or by oversight, is preferable to no regulation at all. This means that there is no incentive for telecommunications operators to pursue universal service if there is no regulatory framework. Therefore, if this hypothesis is accepted,

then some form of regulation should accompany liberalisation.

Summary and Conclusion

This paper has examined the achievement of universal service in a liberalised environment. The background to universal service in telecommunications was examined. This entailed analysing the economics of universal service and its monopoly provision in a non-liberalised environment.

Three main regulatory scenarios were discussed in the context of telecommunications liberalisation and universal service. These were no regulation, regulatory oversight and prescriptive regulation. Two hypotheses emerged from this discussion. The first was that liberalisation itself has a positive effect on universal service and that the regulatory environment was not important. This positive effect can be explained in two ways. One is that universal service becomes profitable, while the other is that the myth of universal service being a cost is exposed. The second was that the regulatory environment does matter and that some regulation is preferable to no regulation.

Caution must be expressed for a number of reasons. The absence of a true indicator of universal service is a major disadvantage. More generally, the scope of the paper is limited. Nonetheless, if this paper contains a message, it is that liberalisation does not appear to be detrimental for universal service. In fact, it may even be good. However, the effects of the various regulatory scenarios are unclear. More detailed research is required to reach a definitive conclusion on the matter.

Bibliography

Analysys (1997) *The Future of Universal Service in Telecommunications in Europe*. Britain.

Armstrong, M. S. Cowan and J. Vickers (1994) *Regulatory Reform: Economic Analysis and British Experience.* MIT Press: London Cambridge, MA.

Blackman, C. (1995), "Universal Service: Obligation or Opportunity" in *Telecommunications Policy* 19 (3), Britain.

Cave, M., C. Milne, and M. Scanlon (1994) *Meeting Universal Service Obligations in a Competitive Telecommunications Sector.* European Commission.

Collins, R. and C. Murroni (1995) *New Issues in Universal Service Obligation.* Institute for Public Policy Research: Britain.

International Telecommunications Union (1998) *Industry Overview at a Glance* http://www.itu.int/ti/industryoverview/index.htm

Kelly, T. (1994) *Universal Service: An Instrument for Regulatory Capture?* paper presented by Mercury/Analysys Expert Symposium on Universal Service: 12-13th December 1994: Cambridge.

Mueller, M. (1993) "Universal Service in Telephone History: A Reconstruction" in *Telecommunications Policy* 17 (5), Britain.

Mueller, M. (1997) *Universal Service: Competition, Interconnection, and the Monopoly in the Making of the American Telephone System*. MIT Press and AEI Press: Cambridge MA.

Noam, E. (1994) "Beyond Liberalisation III, Reforming Universal Service" in *Telecommunications Policy* 18 (9), Britain.

OECD (1997a) *Communications Outlook 1997,* Vol 1. OECD: Paris.

OECD (1997b) *Communications Outlook 1997,* Vol 2. OECD: Paris.

OECD (1997c) *The OECD Report on Regulatory Reform: Sectoral Studies*. OECD: Paris.

Ó'Síochrú, S. (1996) *Telecommunications and Universal Service: International Experience and the South African Effort*
http://www.idrc.ca/books/focus/809/front.html

Shy, O. (1997) *Industrial Organisation: Theory and Applications.* MIT Press: Cambridge MA.

Tyler, M., W. Letwin, and C. Roe (1995) "Universal Service and Innovation in Telecommunications Services" in *Telecommunications Policy* 19(1), Britain.

Tourism Taxation: No Such Thing As A Free Lunch?

Michael McMahon - Junior Sophister

Of all the sectors currently driving the economic boom in Ireland, tourism perhaps represents the strongest. Michael McMahon notes that this fact is not lost on those whose job it is to raise exchequer revenues and assesses the wisdom of applying a tourism tax. Looking at similar initiatives around the world, he cautions that the temptation to tax tourists should be resisted.

Introduction

Forty years ago tourism was effectively free of taxation. However since then, as a result of changing economic conditions, improving transport and technology, and increased globalisation of markets, international tourism has become a major industry with an impressive growth record. According to World Tourism Organisation figures, the number of international tourist arrivals has grown from 25 million in the year 1950 to almost 600 million in 1996. The growth in tourism receipts has been equally impressive, growing from $2,000 million in 1950 to over $400,000 million in 1996; and it is still continuing; it is expected to grow at the rate of four or five per cent per annum for the next twenty years.

As noted by Forsyth, governments are always looking for new tax bases and growing industries, such as tourism, offer attractive possibilities for them. In this essay I will examine how tourism can be taxed and some of the issues involved. I examine Adam Smith's canons of taxation with regard to tourism taxes. I will then focus on the levy of VAT on room rates, restaurants and bars sales; and then move to an analysis of the Irish case. I will conclude by looking at some of the current controversies associated with tourism taxes.

Some of the Issues of Tourism Taxation:

The attention of taxation authorities trying to tax tourists has resulted in a multiplicity of tourism taxes. The International Hotel Association (IHA) conducted a survey among its members in 1995-96 on the extent of the tax burden on hotels; the findings were published in the IHA Taxation Survey - a Comparative Survey of Taxation on the Hospitality Industry. It revealed a great disparity in levels of taxation from almost nil in Kuwait to 39% of room rate in Hungary, where 59 separate taxes are imposed on hotels.

More recently, the World Tourism Organisation Business Council (WTOBC) published its study of Tourism Taxation. It takes a broader perspective than the IHA study as it reviews all taxes which affect tourists. The types of tourism taxation which the study identified may be categorised under two main headings as follows:

A: Directly charged to tourists

Including exit formalities and taxes; entry taxes (visas); terminal charges at airports, sea ports and road borders; accommodation VAT, sales tax, hotel levy, bednight tax; taxes on transport, food & beverage, and shopping; environmental taxes and visitor attraction taxes.

B: Charged to User Business

Fuel tax; duties on the import of equipment used in tourism businesses; property taxes on hotels and resorts; corporation tax.

Other taxes not identified by the WTOBC study include payroll taxes, marketing levies, training levies and various licences.

The study sought to identify changes in taxation of the tourism industry during the period 1995-97. It identified nine new taxes that were imposed and twelve instances of increased coverage of an existing tax e.g. an increase in its rate or a widening of its application. This multiplicity of taxes can cause problems and

complications such as possible double taxation; for example when a tourism tax is levied at a local level, a tourist might pay the tax on arrival to a hotel and again on entry to a local attraction.

The case for taxing tourists:

There are some features of the tourism industry which make it prone to extra attention by tax authorities:

(a) Taxation can be levied on visitors to a country, thus avoiding the unpopularity which inevitably accompanies taxes which are borne by citizens; the tax is in effect exported; this is particularly significant where tax payers are also voters who elect and unelect governments.

(b) Tourists, whether international or domestic, frequently have above average incomes and can afford to pay taxes without undue hardship.

(c) Expenditure on tourism is largely discretionary and thus can be avoided if it would cause hardship.

When these factors are considered together, it is easy for governments to conclude that the tourism industry is a ‘soft touch' for extra taxes. To counteract this view, hotel and restaurant associations are formed, largely representative of owners of businesses, to act as lobbyists against extra taxation. The associations seek to show that the imposition of extra taxes can be counterproductive, causing a decline in tourist numbers and resulting in a reduction of the tax yield. Sometimes they seek to show that lower tax rates will actually increase the tax yield for the tax authority, as well as benefiting the owners of businesses.

The tax incidence of tourist taxes:

The main concerns with respect to incidence of the tax are that of price elasticity of demand (PED) and price elasticity of supply for hotel rooms. Firstly, if demand is elastic then consumers (tourists, guests) will react to a price increase as a result of a tax by seeking other places to stay in lieu of paying the extra tax as well as the original room rate. Therefore, in some competitive situations, hotels will find it impossible to pass on additional taxes to customers and therefore the hotelier pays the extra tax. If the demand is inelastic, then the consumers will not react to price increases by substantially changing their demand and so the hotelier will pass on the cost of the tax and the tourist will bear the burden.

Forsyth also notes the difference in the incidence of a tax between the long- and short-run. He points out that in the short-run there is a fixed capacity in the hotel sector and so firms will have set the price that effectively rations the capacity. If a tax is levied on them, they have little ability to pass on the tax. However, in the long-run hotels have very high elasticity of supply and so the adjustment to the tax will be that more or less all of it will be passed on to the customers and the hoteliers will accept a lower level of output. The effect of the reduced output will depend on the PED as discussed above.

Hotel Associations have been concerned about the introduction of taxes at relatively short notice. It is not unusual for hotels to agree rates with tour operators more than a year in advance; and agreements on room rates with conference organisers can be very much longer. The contract may not allow hotels to pass on any new or increased taxes which arise after the signing of the contract and so the hotel must bear the burden.

The effect on employment:

The OECD's Council of International Tourism Policy recognised "…that tourism should be encouraged as an important generator of employment". Tourism is one of the world's foremost employers of staff generating some 262 million jobs for 10.5 % of the working population world-wide. Not only does the tourism sector create many jobs for skilled labour, but it is also the source of employment for those who need it the most such as the young, students, untrained and parents. The sector provides these people with the experience they need and opens the door to other jobs. As pointed out in the joint letter from HOTREC, EMRA and FERCO to Mr. M. Monti - European Commission lobbying for a reduced VAT Rate on hotels, restaurants and cafes; the role of the hospitality sector in social inclusion is underlined by the fact that of those people directly employed by the sector in Europe, more than 54% have only a basic education.

Hypothecated/Dedicated Taxes:

The idea is that a government spends the revenue it collected in taxes, on those goods/services that benefit those from whom it was collected. An example of hypothecation in the tourism sector is the use of tourism taxes to promote and market Irish Tourism through An Bord Failte. Hoteliers are suspicious of the use of hypothecated taxes; a view supported by the conclusion that in the USA only 57% of hotel dedicated taxes are being used for hotel or tourism-related purposes. Despite this concept's good theoretical objective, it is still the preferred action of governments, and the action encouraged by the IMF, to collect all revenue centrally and then determine expenditure policies.

Philosophy of Tourism Taxation:

Taxation is necessary to provide governments, both national and local, with the finance to meet their obligations in the provision and maintenance of public goods. Where these obligations arise because of tourism, there is a straightforward justification for the taxation. In this category we can put the cost of maintaining airports and immigration officers. When tourists bring their own motor cars to countries they visit, they cause wear and tear to the roads and it is fair that they should contribute to the cost of road maintenance. In some instances, tourists are heavy users of local resources. For example, in drought-stricken areas, tourists with a propensity for frequent showers are often wasteful of the scarce commodity of water. Whilst it may be difficult to calculate the share of taxation which should be borne by tourists, there can be no objection to the principle of tourists contributing their share. But objections do arise if tourists feel they are expected to pay an undue proportion of the taxation; they frequently indicate their objection by going elsewhere. And on their behalf, hoteliers protest as they seek to protect their market share.

Canons of Taxation:

The principles that underlie a good tax system can be traced back to Adam Smith's canons of taxation from 1776. These can be examined under four headings, namely; equity, efficiency, tax administration and neutrality.

Equity:

This refers to the fairness of the tax system including the expectation that taxes are levied on those with the ability to pay. A tax is deemed to be progressive if the average rate increases as the ability to pay increases. Spengler and Uysal, based on the assumption that most of the tax is borne by the tourists and that they have the ability to pay, suggest that hotel taxes are progressive and therefore justifiable from an equity point of view. Much of the other literature on tourism taxes comes to the same conclusion. However the issue is not entirely clear-cut as one must consider whether the tax is paid by the tourists or by the hotelier which, as I have shown above, depends on the price elasticity of demand for hotel rooms.

Efficiency:

This refers to the extent to which the tax system distorts the free market system. An efficient system is one which minimises those inevitable distortions. In the case of the tourism industry, bedroom taxes increase the price per room and thereby make such expenditure less attractive; consumers may react by spending their money on other goods or services.

Studies on taxation for hotels have produced conflicting accounts of the extent of the effect of room taxes on demand. Hiemstra and Ismail have quoted studies which showed that a 10% increase in room prices due to the imposition of a room tax would result in only a 1% decline in room sales; but these studies were conducted in the context of a low taxation regime. At a time when taxes are higher, it may be true that the price elasticity of demand is much higher. There is the celebrated case of the imposition of a 5% tax on rooms costing more than $100 in New York State in 1990. The market for hotel rooms proved to be particularly price sensitive as tourists avoided New York. In 1994, the tax was repealed.

The introduction of a higher VAT rate for 5-star hotel rooms in Madrid in 1994 caused an immediate drop in the number of such rooms from 4,016 to 1,371. This was achieved by hoteliers voluntarily downgrading to four-star to avoid the higher rate and had implications for pricing and competitiveness. The government abandoned the higher rate in 1996.

Neutrality:

This refers to the situation where the tax rates across a range of commodities are equalised. This does not imply tax efficiency unless the elasticities across the commodities are equivalent. An aspect of this principle, which applies to the hotel industry, is the variability in VAT rates between EU member states, despite the fact that a Single Market is supposed to apply. This puts hotels in some states at a competitive disadvantage and prompts them to argue for a remedy. In the case of the hotel industry, there is concern that other industries are being treated more favourably since hotels compete with other industries for discretionary expenditure. In fact the opposite is true within the EU, since twelve of the fifteen member states apply a reduced VAT rate to room sales and eight states apply a reduced rate to restaurant sales. The EU is committed to the harmonisation of VAT rates so there is concern that the adjustment for hotels in most states will be upwards.

Another aspect is the comparative tax rate in competing countries. As tourism is highly mobile, it is important to seek the advantage of lower tax rates than one's competitors, or at least maintain equality. HOTREC has lobbied the European Commission for a reduced VAT rate to enable European tourism to compete on a more-even footing with extra-Community destinations.

Tax Administration:

This topic requires consideration of the compliance costs of tax-payers, the effective enforcement of the tax system and the elimination of uncertainty in the system. Most tourism related taxes were deemed to have low collection costs in the WTOBC study. In a number of instances such as accommodation taxes and environmental taxes, the mis-reporting of business (to minimise taxation) was thought to be a problem. Evidence that such may be happening is provided by the list of major settlements made by the Irish tax authorities with individuals and companies accused of underpaying their taxes; eleven of the top twenty seven were involved in the hotel and catering industry.

Hoteliers, in common with many small businesses, are concerned at the increasing complexity of taxation and other bureaucracy. New financial regulations issued every year and their attendant requirements for form-filling by hoteliers create the need for extra assistance from accountants, adding to costs for hoteliers as well as the direct cost of the taxes involved.

VAT on rooms, restaurants and bars:

For most countries the most significant tax on the tourism industry is Value Added Tax (VAT) which is charged on gross revenue; the rates which were current in April 1998 in EU member states are set out in table 1 (see Appendix).

The table shows that VAT rates on room sales in hotels within the European Union ["The Common Market"] vary between 3% in Luxembourg and 25% in Denmark. Similarly, VAT on restaurant meals varies between 3% in Luxembourg and 25% in Denmark and Sweden.

VAT on alcoholic drinks sold in bars is generally higher than VAT on room or restaurant meals but again Luxembourg is lowest (3%) while Denmark and Sweden are highest at 25%.

The argument for lower VAT Rates on tourism:

An analysis of the historical relationship between VAT rates and industry growth may convince even the most sceptical of the negative effect that high VAT rates have on industry growth. In table 2, I have set out the rate of VAT on hotel room sales alongside the percentage growth achieved in international tourism receipts for the years 1990 to 1996.

An analysis of this table shows that in the EU the relationship between VAT rates and growth in tourism receipts is negative, i.e. higher rates of VAT are associated with a slower rate of growth in international tourism receipts. The correlation coefficient is -0.27 which is not particularly strong; one reason for this is that Ireland has strongly exceeded its expected performance. If it were excluded from the analysis, the correlation coefficient would be -0.54.

Alain P. Feutre's (President of HOTREC) concluding remark at the VAT symposium held in London on 18/10/97 was:

"If the EU and National Governments are serious about tackling Europe's major problems of today, unemployment and loss of competitiveness, then a reduced VAT rate for hospitality can only be a step in the right direction".

HOTREC's arguments in favour of reduced VAT Rates are mainly on the grounds that the demand for tourism is highly elastic and that even a small price cut, made possible as a result of reduced VAT, could stimulate a large rise in demand. A Deloitte and Touche study in 1995 for the British Tourist Authority estimated that the PED is as high as (-) 2.5.

The effect of the increased demand would be a growth in employment (as discussed above) but it would also impact on the demand in other sectors such as manufacturing (e.g. aircraft) and construction (e.g. hotels) through the multiplier effect.

The other arguments include the necessity for EU countries to maintain competitiveness with non-EU countries; neutrality of the taxes; and stability of state revenue. It has been argued that national treasuries need not worry about an initial tax shortfall resulting from a VAT cut as they will be more than compensated by the ensuing increases in VAT and other tax receipts due to greater activity in the sector. A number of case studies are cited to support this contention that lower tax rates can yield more income and vice versa.

The issue of bed taxes:

In several countries there are taxes which are levied on each bednight in hotels, based on a percentage charge or a flat rate. British hotels are currently resisting a 2% bed tax which has been proposed within the ruling Labour Party. If adopted, it would enable local authorities to impose a 2% levy on all rooms in their area. The City Council of Dublin, Ireland has also floated the idea of a bed tax and suggested a charge of £3 per person per night. Both proposals have been met with alarm by hoteliers in the respective areas.

One reason for objecting to a bed tax is the elasticity of demand issue as discussed above. A study conducted by Deloitte & Touche in 1995 on behalf of the British Tourist Authority estimated that price elasticity in tourism may be as high as (-)2.5. This estimate appears high compared with the study by Hiemstra and Ismail in the USA which calculated an average elasticity of (-)0.44, though the UK figure may be higher than the US figure because the UK is more dependent on individual / family tourism than corporate travellers.

The hotel industry in Dublin has been enjoying an unprecedented boom in recent years with high occupancy rates despite the opening of 23 new hotels in one year. This provides a tempting target for a cash-strapped City Council. But the experience of New York in 1990-94 should give cause for caution; where in 1990, the state legislature brought into effect a 5% bed room tax on hotel rooms costing over $100 per night. An econometric study commissioned by the New York State Hospitality and Tourism Association of New York concluded that by imposing the tax, New York gave up $2 in related taxes for every $1 it took in from the occupancy tax. In August 1994, the tax was eventually repealed following a three-year battle by New York hoteliers. The hotel industry in Dublin could suffer similar major damage should a bed tax be levied.

The Irish Case:

The case of the Irish tourism industry is an exceptional one and one that is quoted by Hotel Associations world-wide in the arguments in favour of preferential tax treatment of the hotel sector. There are three main issues that are highlighted in the Irish case:

The effect of lower VAT on tourism growth:

In the early 1980's the Irish Government increased the VAT on hotel accommodation to 23%. The effect of this was that more than 10% of hotels closed their doors. In 1985 the Irish Hotels Federation persuaded the Irish government to cut the VAT on room sales from 23% to 12.5%; in the period that followed Irish tourism grew dramatically and it has continued to grow ever since; in the six year period 1990-96 receipts from international tourism grew by 107% when the arithmetic mean growth rate in other EU countries was 36%. It should be noted however that it is impossible to prove that the reduction in tax was the direct cause of the growth in tourism; other factors such as cheaper air fares to Ireland also helped.

The effect of lower VAT on employment:

As mentioned above, the tourism industry is an important employer of staff in the Irish economy and the reduction of VAT has had a phenomenal impact on the level of employment in the sector. In 1985 when VAT was first cut to 10%, the hotel industry employed 22,000 people; in 1996, despite the fact that VAT was slightly higher, the same figure was 42,000 people.

The stability of state revenue:

Although it is accepted that the immediate effect on state revenue of a reduction in VAT rates on hotels will be a deficit for the first few years, HOTREC use the example of the Irish case to argue that in the long-term there will be a gain for national treasuries. In 1983 when the VAT on tourism was the standard rate of 23%, the tax receipts from overseas tourists amounted to IR£254m. By 1996 the VAT had fallen to 12.5% and tax take was up to IR£818m.

Other Current Issues:

EU Harmonisation of VAT Rates:

'The evolution of increasingly similar patterns of taxation across EU countries is being promoted through formal EU harmonisation policy'. It is the intention of the EU to move to harmonised VAT rates in the union and hoteliers are concerned that the chosen rates should be lower rather than higher. At present there is a spread of VAT room taxes from 3% in Luxembourg to 25% in Denmark. Most countries operate at least two rates and in twelve of the fifteen states hotel room VAT rates are lower than standard rates.

Environmental Taxes:

As mentioned above, Governments are always looking for new tax bases and a relatively new concept of taxation is that of environmental taxes. These are allowing for greater creativity by taxation authorities and are already widely in use in those countries at the forefront of environmental issues; for example, in Denmark it is estimated that there are already more than 300 environmental taxes. Some examples of these 'Eco-taxes' applied to tourists include the German tax on disposable packaging that applies to all sectors of the hospitality industry except fast food outlets. Externalities resulting from air traffic have also been targeted by taxes such as the French 'noise tax' and the tax on aviation fuel applied in the USA. The most unusual eco-tax on tourism is the 'toilet tax' levied on all visitor accommodation in the Knysma area of the Eastern Cape Province of South Africa; this requires all the owners of visitor accommodation to pay 900 Rand per toilet per year.

The International Hotel and Restaurant Association has urged its members to be environmentally responsible, to be aware of potential environmental damage caused by tourists and to seek to reduce such damage. If such action is taken speedily, it may reduce the call for legal measures which are more onerous for hotels.

Conclusion:

The success of the tourism industry in its ability to maintain growth levels over the last forty years has definitely attracted the attention of those public servants who are continually called upon to find newer and more acceptable ways to meet the increasing demands for public goods without increasing, and even while reducing, other taxes. As a result, taxing of foreign visitors to a country may at first appear to be a 'free lunch'. However as all economists know and as I hope I have shown in this essay, there is no such thing as a free lunch and those responsible for taxation policy must examine the distortionary effects of tourist taxes on the tourism industry in the area.

Ireland provides a particularly interesting example showing that through positive use of tourism taxation, the industry can be developed and nurtured to the benefit of both the State and hoteliers. It is evident that this approach is recognised all over Europe because 12 of 15 States apply a preferential rate of VAT to hotels in order to encourage tourism. Through careful policy decisions in the future, it should be possible to increase tourism's role as a growing source of both employment and government revenue for the Irish economy.

Bibliography

Barker, M. (1983) *State Taxation Policy*. Duke University Press: Durham, N.C.

Combs, J.P. & B. Elledge "Effects of a room tax on resort hotels/motels" in *National Tax Journal* 32, pp. 201-207.

Cornell HRA Quarterly (1993) "Higher Tax Rates = Lower Tax Revenues", in *Cornell HRA Quarterly*, p.10, (April).

Cornell HRA Quarterly (1994) "NYC: Tax Cut" in *Cornell HRA Quarterly*, p.6, (August).

Due, J.F. (1970) *Indirect Taxation in Developing Economies*, p.69. The John Hopkins Press: Baltimore, Maryland.

Forsyth, P. (1997) *Taxing Tourism?*. Australian Tourism and Hospitality Research Conference: Monash University, Australia.

Harris, D. (1998) "Hoteliers won't take 'bed tax' lying down" in *Caterer & Hotelkeeper*, p. 18. London, (5/2/98).

Hiemstra, S. & J. Ismail. (1992a) "Analysis of Room Taxes Levied on the Lodging Industry" in *Journal of Travel Research*, pp. 42-49, Summer.

Hiemstra, S. & J. Ismail (1992b) "Occupancy Taxes: No Free Lunches", *Cornell Hotel and Restaurant Administration Quarterly*, pp. 84-89, (October).

HOTREC (1998) "VAT Rates in the Hospitality and Catering Sectors as of April 1998"; Website www.hotrec.org/areas/taxation/04.html

International Hotel Association (1996) *IHA Taxation Survey - a Comparative Survey of Taxation on the Hospitality Industry.* IHA: Paris.

Irish Independent (1998a) "Revenue adds £1m in fines to the coffers" in *Irish Independent*, p. 6, 16 December.

Letter from HOTREC, EMRA and FERCO to Mr. Monti at the European Commission , (1997); Website www.hotrec.org/areas/taxation/04.html

OECD (1985) *Council of International Tourism Policy, Decision-Recommendation, (27/11/85).*

Ruane, F. & F. O'Toole (1995) in O'Hagan, J. (ed.) *The Economy of Ireland*. Gill and MacMillan: Dublin.

Spengler, J and M. Uysal (1989) "Considerations in the hotel taxation process" in *International Journal of Hospitality Management* 8 (4), pp. 309-316.

Wolff, C. (1993) "The Bed Tax Dilemma", *Lodging Hospitality*, February, pp. 34-36.

World Tourism Organisation (1996) *Compendium of Tourism Statistics, 16th Edition*. WTO: Madrid.

World Tourism Organisation (1998) *Compendium of Tourism Statistics, 18th Edition*. WTO: Madrid.

World Tourism Organisation Business Council (1998) *Tourism Taxation: Striking a Fair Deal.* WTO Madrid.

Appendix:

Table 1: VAT Rates in Hospitality Industry: April 1998:

Country	Room	Restaurant	Bars (Drink)

Austria	10	10	16
Belgium	06	21	21
Denmark	25	25	25
Finland	08	22	22
France	5.5	20.6	20.6
Germany	16	16	16
Greece	08	08	18
Ireland	12.5	12.5	21
Italy	10	10	10
Luxembourg	03	03	03
Netherlands	03	06	17.5
Portugal	05	12	12
Spain	07	07	07
Sweden	12	25	25
UK	17.5	17.5	17.5

Table 2: Relationship between the rate of VAT on hotel room sales (1) and the % increase in international tourism receipts 1990-96 (2).

Country	VAT on Rooms	Receipts (% increase)
Austria	10	04
Belgium	06	58
Denmark	25	03
Finland	08	32
France	5.5	40
Germany	16	53
Greece	08	44
Ireland	12.5	107
Italy	10	50
Netherlands	06	72
Portugal	05	20
Spain	07	44
Sweden	12	25
UK	17.5	29

Source: WTO Compendium of Statistics 16th and 18th Editions and HOTREC Web site.