

REVIEWS/COMPTES RENDUS

Regional Dynamics: Studies in Adjustment Theory. G. L. Clark, M. S. Gertler and J. E. M. Whiteman. Winchester, MA: Allen and Unwin, 1986; 342 pages; \$19.95.

Regional Dynamics: Studies in Adjustment Theory serves as a vehicle to bring together views, theories and empirical research published over the last four years by the three authors. The book is organized in five parts. The first addresses the issue of a theory of regional adjustment, while subsequent parts deal with employment and labour demand, regional wages and prices, interregional labour migration and, finally, regional capital dynamics. The theoretical developments in Part I offer the reader an overview of the book and a loose conceptual framework into which the subsequent empirical analysis is to be placed.

First, the theory; the section involves a frontal assault on neoclassical theory and most of its derivatives. Few stones are left unturned, and even attempts by regional scientists such as Casetti to involve catastrophe theory in the explanation of noncontinuous change in regional economies do not escape criticism. Unfortunately, little recognition is given to the contributions by Dendrinos and Wilson or the work in relative dynamics of spatial systems by Sonis and others. Although in the last part of the book capital theory is evaluated more carefully, in this section it is regarded as a homogeneous good/input. The notions of scale and flexibility (introduced by Krumme) are not mentioned. In particular, the criticism of Kaldor's assumptions as "out of date" is rather specious commentary; however, as the book progresses, Kaldor's work is referenced more favourably.

The *raison d'être* for their work is articulated by the authors early on in the book. After criticizing current macro-economic theories, they argue that: "The aim of this book is to introduce a different approach to the study of regional economic systems" (p. ix) and ". . . it must be obvious that there can be no *general* theory of regional adjustment. Instead, adjustment in time and space must be a partial and incomplete process" (p. 19).

Essentially, the authors are arguing from a theoretical perspective that is anti-equilibrium in the classical sense. However, the alternative perspective, that economic systems move towards but never attain an equilibrium because of random shocks, intervention, or other exogenous changes, is not considered. In addition, it is not always clear what is being criticized. The authors use expressions that are never defined explicitly and are certainly not part of the usual set in regional theory. Thus, "reproduction of labour", "restructuring", "Walrasian", ". . . pricing will be Samuelsonian", "Marshallian", "Arrow-Debreu fashion" are used in ways that do not clarify the exposition, especially for those for whom the relevant economics will not be recalled without some further explanation. They see the task of adjustment theory as one which must be explicit about how the economy works as a process in space and time. They argue persuasively that the spatial economic system is now one in which places are characterised by *who* is employed rather than *what* is produced. This has important implications for the composition of indices of geographical differentials, the nature of local economic programs, and the structure of local economies and their volatility. The manifestations of this are a set of local economies that are no longer sector dependent in the classical sense, but are characterized by evolution and performance decisions by *organizations* within sectors and firms.

Essentially, then, we are asked to conceive of the local economy adapting and adjusting to external shocks. While this characterization may not be an entirely new vision, the authors suggest that the parameters, the pace of change, and the nature of the volatility of change are different. In particular, the changing role of labour—its diminished ability to organize—is characterized as the input now providing the buffer against uncertainties.

After over forty pages of commentary, we get to the production model of the firm.

Begin by assuming that firms produce a single product over the period t to $t + n$ which is to be sold on the national market time $t + n$. We assume that firms are price takers in an industry dominated by two or three firms. Firms are assumed to have a fixed capital stock in the short run, little chance of substitution between capital and labour and increasing returns to scale (capital utilization). Firms attempt to maximize revenue at the date of sale, time $t + n$ (p. 44).

In terms of pricing they assume a transaction-cost model of price rigidity—the firm can adjust quantity but not price in the short run. No diagrams are provided to guide the reader and compare this formulation with the neoclassical version dismissed earlier. By assuming that costs of materials (M_t), past receipts (τ) are known, the major unknown will be planned labour costs ($L_{t,t+n}^*$). Thus, we have:

$$\Pi_t = (\tau_t - m_t) - L_{t,t+n}^*$$

where Π_t is disposable profit. Defining τ'_t as receipts net of costs of materials:

$$\Pi_t/L_{t,t+n}^* = \tau'_t/L_{t,t+n}^* - 1$$

In their formulation, a firm's desired profit rate will depend on output, which will depend on the flow of income to capital and, in this version, capital's relationship to labour since, with technological coefficients fixed in the short run, labour-capital interactions determine the share of receipts at $E+n$ that will go to either input.

The model is then embellished, verbally, by contrasting production decisions in two regions—one with employment-at-will practices, the other in a right-to-work region—and the ability with which firms are able to adjust to uncertainty via changes in production. The geographical division of labour will lead, *ceteris paribus*, to regional differentiation and technological change, which are produced from the local economy's short-run ability or inability to adjust to disequilibrium. The model (theory) is tested using Π/w (where w is wages and salaries) ratios for a small sample of states and the textiles and electronic industries. Their formulation involved consideration of:

$$(\Pi/w)_t = f(q_t, t)$$

where q was output. The series was differenced to remove autocorrelation effects (the exact method was described on p. 302, but no reference to this was made on p. 53) but the results were not presented in tabular form for inspection by the reader (we were referred to an earlier article by two of the authors).

At this stage, we may pause for some assessment. After the lashing administered to neoclassical theory, the presentation of the adjustment theory appears rather orthodox. One could criticize all of the assumptions (fixed coefficients, single products, *individual* firms, and so on); however, the main issue is that if the authors do have something different to offer (if only in perspective) their presentation does an injustice to their contributions. Much of the rambling, discursive style of the opening section could be dispensed with in favour of a clearer exposition of spatial adjustment theory. The theory needs to be presented in its most general form, and then in terms of a set of testable propositions (whose empirical testing, presumably, would occupy the remainder of the book). However, the reader is left to do a lot of sifting and organizing; as the book progresses, one senses that much of the presentation in Part I is only referred to tangentially, if at all.

There are several concerns that are rarely acknowledged by the authors. Their theory is firm-based, yet they involve some of the latest literature that argues strongly for an organization view of production decision-making. Further, firms in different sectors appear not to have much to do with each other; even if one chooses not to like the input-output framework (which has many features in common with the authors' theory), there is a clear implication that adjustment in one sector will have impacts elsewhere and will be impacted by changes/adjustment in other sectors. Furthermore, at the regional level, the adjustment process (via labour) will have a pronounced consumption induced impact, positively or negatively, which may dominate the longer-run viability of the local economy. Earlier in the book, they argued that the results of work indicating that cities were becoming more similar in sectoral structure overlooked the substantial product and organizational differences within industries—yet they estimated their model with 2-digit SIC data. Of course, it is easy to criticize such data usage when availability is dictated by other than the researchers. However, one would hope for some measure of consistency, especially as many of the authors' original criticisms were correct. Finally, one has very little sense about the way in which links between the states (*qua* markets) were handled; in one section, a seemingly unrelated regression estimator was used, but few details were provided about the nature of the spatial autocorrelated disturbances so identified.

Part II focuses our attention on local employment profiles and labour demand. An examination of fluctuations and rigidities in the local labour market of some industries and cities is presented. Chapter 6 provides a view of the risks of local adjustment to provide "a portrait of the geography of regional economic adjustment" (p. 103). Borrowing some concepts from demographic accounting, the authors attempt to calculate various facets of the job creation/loss dynamic for an eleven year period for Dallas and Pittsburgh. As expected, the median life of a new job, 129 months in Dallas and 7.6 in Pittsburgh, reflected the different states of the two local economies. However, during the downturns in the business cycle in 1973-75, the differences were only marginal (6.5 and 6.7 months). The opportunity to extend this study to consider the more recent experience, generated by declining oil prices, would prove interesting. Unfortunately, it was difficult to discern the pattern of linkages of job risks in the various sectors and the degree to which jobs lost (gained) in one sector has an impact upon jobs lost (gained) in other sectors.

Regional wages and prices are the issues addressed in Part III. The authors investigate the relationship between urban inflation and its standard deviation for a sample of cities and the relationship between

local (urban) and national inflation. No clear pattern seemed to emerge about spatial price integration versus interdependence. The models were estimated using ARIMA methods; the reader would have to wait for several more chapters (until Chapter 10) for some introductory remarks on time series modelling. (Even here, AR and MA processes were shown but not the distinctions between ARMA and ARIMA models.)

Curiously, the authors did not refer back to adjustment theory to provide some additional insights into their findings. For example, to what degree is local inflation (measured by an urban CPI) a reflection of past adjustments to economic fortunes in those parts of the CPI that have limited spatial mobility? If labour turnover is low, demand for housing may not be as high; while the CPI reflects the costs of new home purchases, it may only apply to a relatively insignificant portion of the local labour force, thus muting the *real* contribution of housing costs to local inflation. In Chapter 8, the opportunity to explore the complex interrelations between regional wage and price dynamics—within the context of an adjustment process—was not fully exploited. Instead, the authors developed the more familiar forms:

$$\begin{aligned}\dot{P}_t &= a_{11} \dot{P}_{t-1} + a_{12} \dot{W}_{t-1} + b_1 + \epsilon_t, \\ \dot{W}_t &= a_{21} \dot{P}_{t-1} + a_{22} \dot{W}_{t-1} + b_2 + \epsilon_t,\end{aligned}$$

where \dot{W} , \dot{P} are the rates of change (first central differences) of wages and prices respectively. The quantity a_{21} was defined further as

$$\frac{\dot{W}_t}{\dot{P}_{t-1}} = \frac{(\dot{W}_t / \dot{W}_{t-1})}{(\dot{P}_{t-1} / \dot{P}_{t-2})}$$

In addition, since $\dot{P}_t = (P_t - P_{t-1})/P_{t-1}$, and similarly $\dot{W}_t = (W_t - W_{t-1})/W_{t-1}$, the calculation of this relationship is difficult to follow.

The consumption induced impacts are acknowledged here with the comment that "... much lower response of money wages to prices year-to-year in the south implies more stable but lower real wages. This may well translate into lower commodity demand and even higher volatility in local employment." It is unfortunate that this expectation was not tested.

Part IV has already appeared substantially in Clark's 1983 book, *Interregional Migration, National Policy and Social Justice*, and has received ample commentary elsewhere. Suffice to note that a great deal of the polemical portions of this book have been summarized in a few pages and attention is focused on the space-time dimensions of migration change. While Lowry's model is the candidate for critical evaluation,

little recognition is given to the elegant frameworks offered by Rees and Wilson and some of the work of Rogerson and Plane.

In the last section regional capital dynamics are explored. Chapter 13 is one of the better-written contributions in the book, exploring as it does various attempts to conceptualize and model regional capital. Empirical implementation, in the form of a dynamic regional investment model, occupies the next chapter. After some repetitious discussion of ARMA models, empirical work is presented on the volatility of regional capital accumulation. However, the analysis proceeds in the vacuum of separate industry estimation and, while the specific results are interesting in and of themselves, it is difficult to tie them in with the adjustment theory mentioned earlier or even more traditional models.

Some attempt is made in the final chapter to implement a model of regional net investment:

$$\Delta K_t = f(\Delta P_{t-n}, P_{t-1}, K_{t-1}),$$

where P_{t-1} represents profit and K capital stock. A minor comment here: if one criticizes the use of net migration as hiding the dynamics of gross flows (as the authors did in earlier chapters), does a similar argument not apply to net investment, especially in view of possible substantial differences in the age of capital by region and thus the volume of depreciated capital from local stock in any given year.

The estimated model, via a two-stage process, for four industrial sectors revealed that lagged state profits were a strong predictor of state net investment, but to what degree was that state investment derived from profits earned within that state? Given earlier concerns focusing our attention on the organization of production, it is surprising that no attempt was made to explore any interregional linkages. Finally, a series of analyses were conducted to explore the relationships between capital intensity, profit rates, real wages and productivity; and then the book ends!

No summation is provided nor any attempt to link the substantial empirical analysis to the theoretical formulations discussed in Part I. The problem may be attributed to the way in which the book was assembled. Essentially, it is a collection of several articles, and parts of a book, which have been published elsewhere. While some readers may quarrel with this procedure, it can be defended on the grounds that the volume of articles produced and the variety of outlets used by scholars in regional science makes it difficult to create a sense of accomplishment in introducing a set of new ideas, conceptual frameworks, and empirical evaluation unless these are assembled in book form. What is perhaps open to question is the way in which this assembly takes place. One alternative might be to collect the articles,

include them intact, and weave a set of connecting chapters to bind the material together. Another procedure might be to base the book on the articles but assume that they had never appeared; in this way, the book stands on its own merits. However, the present volume appears to fit none of the alternatives. There is a great deal of repetition, criticism of extant theory and of modelling procedures, and gaps in presentation of important empirical results. The theory of adjustment is not presented as forcefully or as articulately as one would have wished, and the connections between the parts and the theory are not well developed. Clearly, one should not appear to be dictating style or organization, but after the promise of Part I, the lack of a summary section is surprising. The authors offer little guidance for future work or the degree to which their studies can be linked with some other initiatives. Notwithstanding the earlier commentary, this is the most disappointment feature of the book.

While the authors are justly critical of much of neoclassical theory, they are still fascinated with its power and reach. I look forward to more explorations along this interesting path and the degree to which the authors will be able to present a well grounded theoretical alternative to neoclassical theory in a spatial context.

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Self-Reliant Development in Europe. Edited by Michel Bassand, Ernst A. Brugger, John M. Bryden, John Friedmann and Barbara Stuckey. Aldershot: Gower Publishing Company, 1986; 234 pages; \$31.50.

This book is a selection of papers from a colloquium on "Selective self-reliance and development from below in industrialized countries" held in Switzerland in 1983. The meeting was sponsored by the Swiss National Commission for UNESCO and Switzerland's National Research Program on "Regional Problems". This was to provide a new forum for discussion and debate "... in which the strategy of self-reliance was accepted *from the outset* as a legitimate theoretical and political alternative to the long dominant export oriented nature of regional studies and regional policies" (p. 2). All of the forty researchers present at the meeting were reputed to have "... a common commitment to endogenous development ..." (p. 3). A major emphasis was put on the presentation and collective discussion of case studies. The colloquium had two main objectives: to put the idea of self-reliance into the framework of social science debate on topics such as the division of labour, the world economy, government institutions, and local actions; and to raise questions about the values and consciousness of people

involved in local and regional self-reliant action and discuss the reasons for their successes and failures. The book grew out of the success of the colloquium, although some papers were commissioned from individuals who did not attend the seminar.

The book is divided into four parts. Part I—The Historical and Theoretical Context—contains three chapters by Heirli, Stöhr and Brugger. Part II—Problems and Policy at the National and Sectoral Level—has two studies from Germany and one each from Switzerland and Belgium. Part III is entitled “Action at the Regional and Local Levels,” and after a special introduction by Bryden there are case studies from Switzerland, Italy, France, Austria and Scotland. The book concludes with a section entitled “Future Perspectives,” which contains one chapter by John Friedmann.

I found the book both fascinating and frustrating. The case studies, in particular, contain empirical evidence of great value, and in almost every chapter there are some interesting and innovative ideas. The frustration comes from the fact that the editors have not drawn the book together as effectively as they might have. The book would have been much improved by a concluding section. Another source of frustration is that many of the references in the text either do not appear in the bibliography or appear in incomplete form. There are also too many typographical errors, and the print style used is not easy to read.

Readers who do not share the viewpoints of those writing from the perspectives of “the new decentralism” will find much to criticize in this book. The authors may share the same general perspective, but this is certainly not reflected in either their terminology or their methodology.

My own work is identified as complementary to this book, but the book for me raises as many questions as answers. John Friedmann seems to have once again changed direction. He distinguishes between “endogenous development” and “self-reliant” development. He argues that in the light of current political and economic conditions “endogenous development” is virtually impossible except for world city regions. He sees self-reliant development, which he defines as “radical social praxis”, as the only viable alternative. Self-reliant development is seen as a “strategy of social mobilisation for political ends”, and he urges “militants” to use both internal and external peripheries as *staging areas* for self-reliance, to “colonize the interstitial niches of the system that remain”, which he argues will expand in size as we approach the next century and the contradictions of capitalism intensify. It is not clear that other authors in the book define self-reliance in the same way as Friedmann, nor are they so pessimistic about the possibilities of endogenous development.

The book does not fully meet the somewhat ambitious objectives set for it, and the reader will find different and sometimes conflicting definitions and views, but I found it most stimulating reading.

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Northern Development: The Canadian Dilemma. R. Page. Toronto: McClelland and Stewart, 1986; 360 pages; \$17.95.

Northern Development: The Canadian Dilemma is, for the most part, an interesting and stimulating introduction to some of the major issues of northern regional development in Canada and, appropriately, is part of the “Canada in Transition” series published by McClelland and Stewart. The author provides an obviously well informed personal statement in an attempt to integrate the key issues and events of the 1970s, which proved to be an important decade for subsequent thinking on northern development. The approach followed is from the perspective of pipeline development, from which Page discusses the environmental, social, economic, and regional aspects of the developmental decision making process.

The first three chapters establish a background, important for an understanding of the northern regional development debate, and describe the paradox that exists between the need for, and resistance to, development. In Chapter One, Page defines the “Canadian Dilemma” of the title (that is, the conflict between idealism and development) and identifies the past and current motives behind development of the Canadian north. Chapters Two and Three review two important aspects of the resistance debate more closely. Chapter Two, for example, examines the growth in influence of the “Politics of Ecology” in the 1970s as the vigorous desire for northern development was matched by an increasing public awareness of the destructive effects such endeavours could have on the environment. Page supplements his introduction of the anti-development argument with a discussion of both the Marxist interpretation of the concept as a system of dependency, and of the growth in “Intellectual Nationalism” that called for northern independence and environmental protection. Chapter Three discusses resistance to development from within the north and historically traces the source of native negativity, with particular emphasis placed on the issues of treaties and aboriginal rights.

Chapters Four to Six detail the procedures involved in the attempt to implement and build a northern pipeline in the 1970s, and they draw heavily on the author’s own experience as a participant at both the Berger and the National Energy Board (NEB) inquiries. Chapter

Four examines the complex corporate structures and served interests of the main consortiums bidding for the pipeline contract. Chapters Five and Six look at two important aspects of an elaborate decision making process. The Berger inquiry, discussed in Chapter Five, is portrayed as something of an historical landmark of public inquiries; not only were Berger's recommendations unexpected by the proponents of free enterprise but they also meant strong repercussions for North American governments. Berger's arguments emphasized both destruction of the environment and the possible undermining of fragile northern societies as they became dependent on the south; his limited recommendations for development excluded the major, and until then most favoured, American consortium (Arctic Gas) from building a pipeline on their proposed route. Chapter Six examines the role of a government agency, the NEB, in its capacity as regulator of, and advisor to, industrial development. Like the preceding chapter, this is well informed, and Page chronicles a personal view of events behind a very drawn out decision making process troubled by irony, poor management, and disorganization.

Chapters Seven to Ten examine the various costs of development. Chapter Seven focuses on technological and environmental restrictions to development, while Chapter Eight discusses its destructive effect on natural ecosystems in relation to three potentially affected wildlife species (snow geese, caribou, and beluga whales). In Chapter Nine, Page examines the social cost of development to native communities and identifies the major concerns as those of habitat destruction and land claims, and he suggests reasons, backed by evidence, for community fears over development and the introduction of a wage-paying economy. Chapter Ten describes the escalating financial costs of pipeline research and building, and the various attempts to secure funding and insurance for the project. Page concludes the chapter by emphasizing the necessary role of government backing if such projects are to succeed.

The initial ten chapters examine development issues that are predominantly internal to Canada. However, Chapter Eleven examines the position of Canada's north in the circumpolar world in an attempt to establish the relevant sovereignty concerns. Once again, Page offers a knowledgeable opinion on these matters, and he discusses the increasing significance of sovereignty issues and the necessity for multinational cooperation in order to achieve workable northern policy objectives. In Chapter Twelve, the issues of the preceding five chapters are integrated, and Page advocates the formation of strong territorial assemblies capable of sharing power with an aim to settle land claims before development can proceed more vigorously. In the meantime, technology and research can be advanced to a state that is more

able to cope with development when it finally occurs. Page also suggests certain government changes, such as the redefinition of objectives for the Department of Indian and Northern Affairs, which, he claims, are presently too diverse and should focus on the development issue alone. In short, Page is calling for the implementation of a policy which leans heavily towards the recommendations of Berger and which is capable of addressing the Canadian development dilemma.

The contents of this book demonstrate the author's credibility as an authority on northern development. Persons seeking an objective review of the issues may find, however, that Page's close involvement renders the content a little too emotive in places. The chapters that discuss technological and economic aspects of the process are less subjective as, by his own admission, Page is not an expert on these topics. In general, he writes from a perspective that is sympathetic to native considerations but not biased against the economic motives of some developers. His position, therefore, is not one of anti-development but one that recognizes the need to establish a clear and coherent development policy that addresses both land claims and environmental impact issues. The author has great respect for the pioneering work of Berger and the inquiry that set something of a precedent in terms of its influence on policy formulation and philosophy. The recommendations of the report are referred to throughout the text and his first-hand descriptions of these proceedings and the NEB inquiry are interesting and at times humorous. Page's empathy for the "underdog" is evident throughout the book, not only in his attitude towards the northern people, but also in his description of, for example, the media's response to Arctic Gas's attempts to counteract the findings of the Berger inquiry, and of the disorganization of the NEB inquiry.

The preface declares this book to be aimed at both specialists and the general public, but it is best described, and recommended, as a "pick up and browse" text. It is both well written and readable, mainly due to Page's insights (which can only be gained from first hand) and very close involvement with the relevant issues and procedures. The book's title may be misleading to someone seeking a general introduction to northern development and, in this capacity, it is less successful, although the complexity and diversity of the subject matter makes the writing of such a text difficult. Despite the inclusion of chapters that establish the developmental context in the north, the emphasis is clearly on pipeline development in the 1970s, which is used as a vehicle with which to address this wider question.

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Fertility in Canada: From Baby-boom to Baby-bust. A. Romaniuc. Ottawa: Statistics Canada, 1984; 156 pages.

We have here an authoritative statement on fertility trends in Canada, by the person who heads the Division responsible for Statistics Canada's population projections. Romaniuc covers the territory well, from proximate factors (timing of births, marriage, divorce, birth control, and abortion) to the more distant factors (status of children, sex roles, and economic factors). He also includes a brief look at implications of trends and a discussion of possible policy interventions to sustain childbearing.

In considering the long-term trend, Romaniuc notes that the low fertility of the 1930s was a "continuation of an historical downward trend which began at the end of the 19th century, whereas the current low is a sharp reversal of a major upward trend" (p. 14). This raises the following question: Is it the baby boom or the baby bust that is the anomaly? Contrary to the above quote, one might see the baby bust as the natural extension of trends into the 1930s, while it is the baby boom that requires a distinctive explanation. Romaniuc does tend to favour arguments that would suggest that low fertility is here to stay, but he hedges his bets somewhat, in the (fond?) memory of the baby boom. Possibly that is why, as one of the persons responsible for Statistics Canada's fertility projections, he has tended to err on the high side. In the 1974 set of projections the fertility assumptions ranged from a total fertility rate of 2.6 to 1.8 births per woman. By 1978 we were below the figure of 1.8. In the 1979 projections the assumptions were 2.1 and 1.7. By 1982 the births were again lower than this low figure. Of course it is easy to make after the fact criticisms of projections. However, in the future scenario presented in the present volume, the total fertility rate is placed between 1.5 and 2.5 births per woman. One of the projections involves cycles ranging from 1.5 to 2.5. Is the 1.5 scenario not on the high side for a low projection? Already Denmark, West Germany, Luxembourg, and the province of Quebec are below this figure. If we removed all births occurring to non-married women, the Canadian fertility rate would be 1.4 in 1985.

Let us look in more detail at the out-of-wedlock births, for which we have useful information here. In 1985 the births to women who were not married amounted to 18 percent of the total. At ages 15-19, the fertility rate of non-married women has increased slightly from 14.7 per thousand in 1968 to 16.9 in 1985, in spite of the increased numbers of abortions. Romaniuc makes the case that there is now less "unwanted" childbearing. However, that would largely apply to marital childbearing. A good proportion of the one in six births occurring outside of marriage must be unplanned. Thus, issues of unwanted fertility are still relevant, and could have received more attention.

Before turning to the issue of low fertility, it is useful to make a few further comments on Romaniuc's overall interpretation of the trend. The chapter on "factors in the current fertility decline" is an interesting statement, raising issues of proximate factors (lower marriage rates, postponement of marriage, more divorce, more consensual cohabitation, postponement of births, less unplanned pregnancies) as well as broader issues (changing status of children, sex roles, and economic factors). Regarding the status of children, Romaniuc argues that the days of the "child-king" at the centre of the family's hopes for the future are over. Children are now seen as a means through which adults can receive affective gratification and blossom as individuals. Of course, many have concluded that children can come in the way of this affective individualism. Clearly, the changing sex roles and aspirations of women are core to interpreting the fertility decline. Given other opportunities, childbearing exerts a heavy price. The "role of economic factors" is less clear. Romaniuc documents that the income of family heads under 25 years has deteriorated slightly, relative to average family incomes (p. 72). However, if economic factors are so important, why would the sharpest decline in the fertility rates occur in the period 1961 to 1966 (3.8 to 2.8 births per woman)? In comparison, the so-called deepest recession since the 1930s has had a negligible impact: rounded to one decimal, the total fertility rate has been stable at 1.7 over the period 1980 to 1985.

One could argue that the discussion of the dynamics of fertility presented here focuses excessively on the recent experience. In focusing on the period "from baby-boom to baby-bust", Romaniuc does not attempt to explain the long-term trend, nor the baby-boom as a deviation. Are these not important pieces of the puzzle when we are interpreting the current fertility decline? Does an appreciation of the baby-bust not require us also to interpret the baby-boom? It is astounding to observe how the baby-boom affected all age groups except women over 44 years of age (p. 28). Equally astounding is the observation that the baby bust affects all groups, except for the increased rates since 1975 for women aged 30-34. However, this increase is slight, from 64.4 births per 1000 women in 1975 to 74.6 in 1985, while as recently as 1970 the rate was 81.8 per 1000. It would be hard to argue that the economic climate has had such a profound impact in these specific years. While more difficult to document, could it not be the social climate that is responsible? As Romaniuc says, "procreative behaviour may be more a matter of mores than of economics" (p. 83).

The author considers various factors in interpreting the fertility trend, but these are never put together in one consistent explanation. While one factor cannot hope to capture the entire trend, it would be useful to start with a core explanation, around which other factors are

added. Interpretations are more satisfying if they go beyond the listing of relevant factors to put them together in a framework that indicates which factors are more important and how they interrelate around a core explanation.

Rather appropriately, the author has raised the issue of policy interventions that might support childbearing. Questions of conflict between employment and parenthood roles are important; thus it is useful to "search for institutional support to ease the pressure arising" from these dual roles (p. 111).

Given the importance of sex roles, it is unfortunate that analyses are not undertaken on men's roles in childbearing. There is a danger in the present analysis, especially when we entertain questions of promoting fertility, that it is women who are "blamed" for inadequate births. Analyses would probably show that much of the problem lies in men's failure to accommodate to women's desire for more role flexibility. At the very least, we must rid our language of sexist expressions (for example, "the reader will find out for himself", p. 70).

Issues of sustaining fertility also beg the question of what is an appropriate level of population growth for Canada. At one point, various scenarios are presented for sustaining a 1 percent population growth over the long term; for instance, with a fertility of 1.6 this would require 300,000 immigrants per year by the turn of the century. While it can be argued that Canada has profited from population growth of this magnitude or higher in the past, it is not clear that maintaining this growth is an important goal for the future.

In spite of these observations, Romaniuc is to be commended for a book that sheds light on key demographic questions in Canada. The author is well read and has produced a polished manuscript that deserves to be recognized in the field as an authoritative statement on the trends and dynamics of fertility and their implications.

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Input-Output Analysis: Foundations and Extensions. Ronald E. Miller and Peter D. Blair. Englewood Cliffs, New Jersey: Prentice-Hall, 1985; 464 pages.

The stated objective of this volume is as simple as it is important; to present the fundamentals of the input-output model and to sketch some areas of recent extension. Upon reading this prelude, one is immediately struck by the thought that such texts must surely be available in abundance by now. However, the authors would appear to

have done their homework quite thoroughly, since it is indeed difficult to discover a well-known volume with the aspiration mentioned above since the publication of William Miernyk's handy text over twenty years ago.

In a clear and concise manner, the authors fill this void for students and researchers alike. One cannot fail to be impressed by the depth of rigour in some of their explanations about the basic elements of the field, and the wealth of illustrative examples that they employ. Their experience in the field shows up admirably when they clarify some of the terminological difficulties faced by the student. For example, alternatives such as "input coefficient", "I-O coefficient", and, "technical coefficient" not only help to clear the mist but also give the book broader international appeal.

For the record, there are chapters on the basic elements, regional and multiregional models, multipliers, data organization, energy models, environmental analysis, nonsurvey and semisurvey techniques, and other selected topics. The detailed mathematical structure of the input-output model and a useful time-series of U.S. national tables are included in appendices. Some readers might have preferred to see the matrix algebra used throughout the book, but this is always a difficult, market-oriented dilemma.

There is perhaps one important area which is treated rather lightly in an otherwise excellent volume. We are all well aware of the rapid pace at which technology is changing each day. There are too many signals reminding all of us that constant production functions are largely a perspective of the past. This puts ever-increasing pressure on one of the fundamental restrictions of input-output analysis in its traditional form, namely fixed input coefficients, and calls for increased attention to truly dynamic analysis. The authors are aware of this emerging issue, inasmuch as they devote about ten pages to it within the chapter on selected topics. Bearing in mind the wealth of earlier work on turnpike theory, vintage theory, and the like, this reviewer's bias would have favoured more attention to some of the promising advances in dynamic analysis that might open up new pathways for intersectoral analysis in the near future.

Aside from a few indexing problems here and there, the book presents very well and undoubtedly will fill the exposed niche in a convincing and comprehensive fashion.

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