



Arthur Lewis and Caribbean Labour Market Analysis*

Andrew S Downes

Professor of Economics and University Director

Sir Arthur Lewis Institute of Social and Economic Studies

UWI, Cave Hill Campus, Barbados

May 2008

*Distinguished Lecture, Year of Sir Arthur Lewis, UWI, St Augustine, May 13, 2008




Arthur Lewis and Caribbean Labour Market Analysis


Structure of the Lecture

- 2 Introduction
- 3 Lewis' Labour Market Framework: An Overview
- 4 Caribbean Labour Market Analysis: Alternative Approaches
- 5 Caribbean Labour Market Performance
- 6 The Future of Caribbean Labour Market Analysis
- 7 Conclusion

Introduction

- Arthur Lewis is not generally considered as a labour economist. He is known as a development economist.
- Traditional labour economics textbooks make little or no reference to his work (a one or two carry a chapter on developing countries)
- But his paper on “***Economic Development with Unlimited Supplies of Labour***” (1954) and subsequent refinements (1958, 1972, 1979) have influenced the analysis of labour markets in developing countries.

- 
- Key monographs on the labour market in developing countries rely a lot on his work [Squire, 1981; Mazumdar, 1987]
 - Lewis' work on the labour markets in developing countries can be said to form the foundation of "***Development Labour Economics***", that is, labour economics taught from the perspective of developing countries (cp Development Micro- and Macro-economics).

- 
- Lewis' basic model has been applied to several situations outside of its initial purpose.
 - Beckles and Downes: transition from indentured labour to slave labour in Barbados
 - Knight, Yokota and Islam, etc; recent analysis of transition in China with a focus on Lewis' Turning Point.
 - The basic Lewis model has been extended by Jorgenson, Ranis and Fei, Harris and Todaro, Fields, Dixit and Marglin, Bhagwati and Srinivasan, etc [agricultural transformation, rural-urban migration]




under the rubric of the ***dual economy model***.

- The focus of this lecture is on the application and usefulness of Lewis' ideas on the operations of the labour market in developing countries with special reference to the Caribbean situation.
- Some of his writings directly focus on the Caribbean case.

2 Lewis' Labour Market Framework: An Overview

- Alternative approaches to labour economics:
 - Neo-classical (marginal decision rules, competitive markets)
 - Institutional/structural (institutions, social factors, bounded rationality)
 - Radical/Marxist (class analysis, historical forces)
- Elements of labour market analysis:
 - Demand analysis (firms, organizations)
 - Supply analysis (individuals and households)
 - Wage determination (linked to poverty/distribution of income)

- 
- Employment determination(different skill levels)
 - Institutions (laws, unions, government, educational, etc)
 - Historical/social factors (internal labour markets, customs)
 - Lewis' framework incorporates (neo)-classical and institutional/structural elements.
 - ***Dual Labour Market Model***
 - Derived from his papers (1954, 1958, 1972, 1979)
 - Closed and open economy versions of the model
 - Two sectors – modern or capitalist



- traditional or subsistence


(i.e., shorthand concepts which can be modified with dis-aggregation)

- ***Traditional or subsistence sector*** (subsistence agriculture, informal sector activities, females in households) and population growth provide a source of **surplus or abundant labour**. Sector is characterized by low level of productivity (probably 'satisficing' firms/units)

- Subsistence wage at which the ‘surplus labour’ is available for employment in the **capitalist/modern sector**(large farms, industrial firms etc) is equal to
 - (i) minimum income required for subsistence, or
 - (ii) average product of labour plus a margin

i.e.
$$W_T = APL + m \text{ or } W_T = W^*_S$$


- Profit maximizing firms in the capitalist sector will hire labour from the subsistence sector at the subsistence wage (W_T) (i.e., infinitely elastic supply of labour from the subsistence sector)
- Aggregate employment expands through the capitalist/modern sector as capital formation and technical progress occurs.


- 
- The constant wage to the capitalist sector allows firms to increase profits which are used to invest (capital formation)
 - The expansion process or employment creation/absorption continues as long as the capitalist sector can recruit labour from the traditional sector (**closed economy model**).
 - When the surplus of labour is exhausted at the fixed subsistence real wage rate, then wages begin to rise – the so-called '**Lewis turning point**'.
 - In the **open economy model**, the capitalist sector can rely on foreign labour when the wage rate begins to rise (i.e., mass immigration of unskilled labour can keep wages low at the

- Subsistence level)
- Alternatively, capitalist can export capital (i.e. invest in other countries) when the turning point is reached. Foreign direct investment can also occur in the economy.

■ **Lewis Employment Model for the Caribbean**

- Derived from his papers (SES 1958 and CDB Address 1972). His paper on Industrialization in the BWI (Lewis 1950) focuses on regional export industries and the regional mobility of labour.
- Two-sectors: 'low wage' and 'high wage'
- Low-wage sector: small scale farming domestic service, casual work.
- High-wage sector: large farms, factories, mines

- 
- Expansion of the 'high-wage' sector relative to the 'low-wage' sector reduces the surplus labour (unemployment) existing in the 'low-wage' sector.
 - Increases in employment in the 'high-wage' sector depends on:
 - Physical resources (man-made and natural) available to the sector
 - Export of commodities (where natural resources are limited)
 - Type of production technology
 - Changes in real wage
 - Since money wages are generally sticky in a downwards direction, real wages can be reduced by increasing the cost of living, increasing import duties, a devaluation in levying taxes on employees

- 
- These measures are problematic in a Caribbean type economy and regime and require astute political judgment. Wage determination process left hanging in the model.
 - Human resource development (education/training) enhances labour supply quality especially of females who would benefit from educational opportunities. [Lewis' papers on education and development]
 - Several assessments of the Lewis Dual labour Market Model and his Employment Model for the Caribbean (see Cumper, 1963).




■ **Summary of Lewis' Framework:**

- Labour market is segmented into two sectors
- Wage differentials critical to employment creation
- Capital accumulation, technical change and exports are also important determinants of employment creation
- Need to consider institutional features of the market
- Simple explanations of the wage determination process
- Labour mobility/migration is important (domestic and regional)
- Quality of labour supply enhanced through education and training
- Caribbean seen as one market for labour (regional/Pan Caribbean industries targeting export markets)

3 Caribbean Labour Market Analysis: Alternative Approaches

■ Lewis-Tidrick Wage Gap Model


- Tidrick (1970, 1975) extended and applied Lewis' formulations in terms of a 'wage-gap model' to Jamaica
- Wage dualism exists with market clearing wages in one sector and above market clearing in another
- Migration from one sector to another is based on
 - (i) expected wages and
 - (ii) probability of finding a job (cp Harris-Todaro extension of Lewis' dual labour market model)

- 
- The existence of a ‘sharing mechanism’ within households to assist the unemployed while they are engaged in job search (***wait or luxury unemployment***)
 - A wage ‘spill-over effect’ from ‘high wage’ to ‘low wage’ sector thus creating further unemployment
 - “whereas the rate of modern-sector employment growth is largely a function of wage trends, the level of unemployment is a function of a wage structure”
 - Increase in real wages in the ‘high wage modern sector’ reduces employment in the long run via factor substitution

- Support for Lewis-Tidrick model in the Trinidad and Tobago case [Farrell (1980) and Henry (1990)].


■ **Seers' Open Petroleum Economy Model**

- In an 'open petroleum economy' (e.g., Trinidad and Tobago) income is quite high, hence employment is a key variable requiring explanation (Seers (1964, 1969))
- Employment growth depends primarily on:
 - (i) the growth of exports (+)
 - (ii) the growth of real wages (-)


- 
- The pace at which employment grows depends on the difference between the trends in exports and wage rates
 - Other factors such as the rate of taxation on exports (+), the profit margins in domestic industries (-) and the propensity to import (-) have insignificant effects on employment growth
 - Model has been elaborated by Brewster (1968), Taylor (1968) and Bruce (1972).

■ Labour Market Segmentation Model

- The dual sector labour market framework used by Lewis, Tidrick et al has been generalized for the Caribbean by Doeringer (1988), Anderson (1987), Panton (1993), Clarke (1990)
- The institutional features of the Caribbean labour market are developed in this 'model'
- Doeringer used a “formal-informal labour market model”
 - Formal sector labour market – internal labour markets
 - **large-scale operations**

- 
- Informal sector labour market – flexible, easy entry
 - income and work sharing
 - absorb displacement from formal sector

Anderson used four (4) labour market segments: primary formal (bauxite, utilities, agricultural); secondary formal (hotels, manufacturing, distribution) government and informal. Approach is largely descriptive.

- 
- Panton extends Anderson's classification to include urban and rural informal labour markets. He allows for migration elements in the case of Jamaica
 - Clarke's **generalized segmentation model** follows the Tidrick approach and incorporates job search elements. The impact of education and the role of the informal sector are examined. He finds evidence of a 'job ladder' or 'bumping' in Trinidad and Tobago and unemployability associated with long unemployment spells (skills depreciation).




■ **Summary of Caribbean Approaches**

- Extension of Lewis' basic dual labour market framework
- Focus on some key variables: exports, wage differentials in employment determination
- Greater institutional detail, especially segmentation model/heterogeneous labour and labour markets

■ **Recent Caribbean Labour Market Analysis**


- Move from grand theorizing to micro-econometric and macro-econometric analyses (***Empirically-driven Labour Market Analysis***)

- 
- Research by Handa on Jamaica, Strobl on Trinidad and Tobago, Coppin on Trinidad and Tobago and Barbados, Downes on Barbados and Caribbean, Sookram and Watson on Trinidad and Tobago informal sector, Henry and Kairi Consultants on Poverty and labour market, Ricketts and Seguino on gender aspects of the labour market have been part of the modern ***Empirically-driven Labour Market Analysis of the Caribbean***
 - These studies have not been influenced **directly** by Lewis' work but provide a rich empirical assessment on the operation of the Caribbean labour market.

4 Caribbean Labour Market Performance


■ Labour Force/Supply


- Relatively low rate of population and labour force growth (less than 2 percent for most countries over the 1990-2004 period).
- Some ageing of the population (those over 65 years of age). Issues of long term labour market constraint and social security costs.
- Fall in dependency ratio in several countries (i.e., ratio of those under 15 years of age and those over 65 years of age to those aged 15 to 65 years).
- Significant increase in female participation rate and relative constancy, and in some cases, a decline in the male participation rate. Male rate is however higher than female rate.

- 
- General improvement in the formal educational base of the labour force (but still significant deficiencies in the Caribbean labour force)
 - Some growth in the small cadre of professional/managerial/ technical/administrative occupations. Work permits data indicate continued reliance on extra regional sources of skilled labour.
 - Several skill development programs to enhance the quality of the labour force especially in the technical/vocational areas (especially for youth)
 - Brain drain occurring

■ **B Employment**

- Strong relationship between output growth and employment growth at the macro level. But low rate of employment growth- under 3 % over the past two decades
- Decline in agricultural sector as a significant employer of labour in most countries (still important in Guyana, Belize, Dominica and St Vincent). Impact of removal of trade preferences for bananas and sugar in Eastern Caribbean
- Growth in new and traditional services employment – X-tourism, distribution, business/financial services, cultural services and government services. Some development in ICT/knowledge industries' employment (data processing, software programming, e-commerce)—creative destruction in the labour market (Job destruction-de-skilling and job creation-re-skilling)

- 
- Significant increase in the number of self-employed and own-account workers. Associated increase in the informal labour market (Jamaica and Guyana – the informal sector estimated at over 45% of GDP around 2000-2002).
 - Government is the single largest employer of persons, but the private sector accounts for the largest percentage of the employed (generally over 60% of the employed).
 - Some degree of labour market segmentation – females dominant in the clerical/sales/service jobs. Some growth in female employment in non-traditional professional/technical occupations.

- 
- Steady increase in **contract workers** in several countries (in effort to cut labour cost, improve competitiveness, response to high non-wage labour costs)
 - Some evidence of an increase in the **working poor** – a link between poverty and the human capital base of the labour market.
 - Call for minimum wage legislation to be strengthened in some countries. Minimum wage increases the extent of part time workers in firms and can harm small firms
 - Falling level of unionization of the labour force over the years (under 30 percent) but still important in key sectors.
 - Social networks seen as important in shaping employability




■ **C Unemployment**

- High rates of unemployment (although some decline in Barbados and T&T in recent years – single digit).
- Very high rates of unemployment among the youth (15-24 years of age) and especially among females. Youth unemployment rates more than double the national rates.
- Low level of educational and training attainment among the unemployed – low human capital base, mismatch problem. Several of these persons experience long unemployment spells/skills depreciation.
- Very low level of unemployment among skilled/professionals

- Higher urban unemployment in geographically larger countries and higher rural un/under employment in smaller countries.
- High reservation wage by the unemployed – queuing for jobs is preferred. Remittances from abroad have exaggerated this situation.
- Weak systems of social protection for the unemployed (use of family support system). Existence of residential discrimination.
- Poor labour market information for matching people to jobs and allowing the smooth and productive transition from school to work

■ **D Wage-Price-Productivity Nexus**


- Nominal wages determined largely by the collective bargaining process – with downward nominal wage rigidity.



- 
- Some real wage stickiness/resistance exists in some countries.
 - Real wages seem to be rising faster than measured labour productivity at the aggregate level – negative impact on competitiveness.
 - Decline in the degree of unionization of the labour force (less than 35%)
 - Earnings affected mainly by human capital and work experience.
 - Various forms of minimum wage arrangements exist (national and occupational minimum wages are common). Labour laws and practices create adjustment costs hence inflexibility.
 - Attempts at pay for performance/gain sharing schemes in some countries – Barbados, Jamaica. Establishment of National Productivity Boards. Social Partnerships – Barbados (?Jamaica)





5 The Future of Caribbean labour Market Analysis

- Main Labour Market and Human Resource Challenges
 - Youth unemployment (especially females)
 - Difficulty in attracting qualified workers (mismatch between skills and jobs)
 - Low levels of productivity and motivation
 - Growth in the informal labour market
 - Brain drain to more developed countries
 - Labour market-poverty relationship
 - Absence of adequate social safety net to cushion shocks
 - Absenteeism in the workplace

- 
- Linking pay to productivity/performance
 - Free mobility of labour within the CSME
 - Labour economics lies at the interface of sociology, (sociology of work), psychology (behavioral labour economics), human resources management (personnel economics), industrial relations (economics of trade unionism)
 - More research work is needed in these areas to meet the challenges of the labour market in the Caribbean

- 
- 
- While labour economics is an active area in more developed countries, it is considered a 'low level' area in the region.
 - Several micro-econometric techniques have been developed and applied to deal with labour market issues [e.g., James Heckman].
 - While courses on labour economics are part of the Dept of Economics list of options, labour economics is hardly taught to economics and other students at the 3 campuses at the UWI.

- 
- Few economists can regard themselves as ‘labour economists’ in the region.
 - But the outcomes of labour market relationships and behaviours influence the lives of all persons in the region – over 90% of persons earn their main income from the labour market, labour market participation influence personal household decision-making, the type and level of education determines future labour market opportunities, pensions received are a result of work in the labour market, the standard of living to which we




aspire is influenced by the labour market and so on.

- Caribbean labour market analysis requires:
 - Greater interest on the part of economists
 - Improved labour market information/dataset – some of which are costly to obtain
 - Involvement of stakeholders (unions, employers, academics/researchers)
 - Identification of key/independent labour market issues
 - A stocktaking of research (a significant amount of work has been undertaken of varying quality).


6 Conclusion

- Arthur Lewis' work on the dual labour market has formed the foundation of the field of ***'development labour economics'***.
- His basic model has been extended by development economists and Caribbean researchers. Most of this work has been the vintage of the 1960s and 1970s.
- Lewis' work has influenced development and labour market policies in the region – regional industrial development to resolve surplus (unskilled) labour problem, educational development to enhance the





the quality of the labour supply, fiscal incentives to boost development (eg, foreign direct investment), export promotion, etc.

- While recent work on Caribbean labour market analysis has not been directly influenced by Lewis' work, the issues he considered (employment creation, wage determination, etc) are being examined by Caribbean economists.
- There are still a number of analytical issues which need to be addressed in the Lewis labour market framework and its



extensions – household production, gender and labour supply, behavioural foundations of Caribbean firms and labour demand, wage determination and collective bargaining, labour market regulations and adjustment costs, poverty and the labour market, etc.

- Economists/statisticians need to revisit the Lewis labour market framework, provide it with stronger microeconomic behaviour foundations and undertake greater micro-econometric research with improved datasets.

- 
- 
- Although Lewis can be regarded as the father of development labour economics, the rigorous development of his labour market analytical framework would be a fitting tribute to his memory.
 - As Caribbean economists we need to lead the way

Thank You Very Much!