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THE URBAN INFORMAL SECTOR: THEORY, CHARACTERISTICS, AND GROWTH FROM 1980 TO 1990 WITH A SPECIAL EMPHASIS ON INDONESIA

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The Urban Informal Sector: Theory, Characteristics, and Growth from 1980 to 1990 with a special emphasis on Indonesia[1]

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Abstract

This paper defines the informal sector (IS) as being self-employed persons assisted by family and other non-wage earners. It reports on a survey in Semarang which shows that many IS self-employees earn more than the regional minimum wage which is consistent with the findings from other studies. An analysis of Central Bureau of Statistics data show that the rate of growth of the informal sector from 1985 to 1990 was much lower than the formal sector and much lower than the informal sector from 1980 to 1985, with the construction and transportation sectors being exceptions and the female informal sector growth being 39 % that of males. Various theoretical aspects of the informal sector are discussed which need to be taken into account in policy formulation.

Introduction

The informal sector is very important in developing countries because of the large percentage of the work force it usually employs and its income generating capabilities for low income groups. It is also important because it commonly contains reservoirs of disguised unemployed labour which potentially can be more productively utilised in other economic activities.

The main purposes of this essay are to increase our understanding of selected important aspects of the theory and situations regarding the informal sector in economic development in general and with specific reference to Indonesia. First we report on some conclusions from the literature and our survey results about whether the informal sector is primarily an absorber of otherwise unemployed refugees from the formal sector or a sector in which persons are happy to be employed. Then we look at five aspects of the informal sector which will help us to understand better its role in the development process, factors affecting its growth and potential for development, and how a decrease in the size of the informal sector relative to the formal sector can be interpreted. These aspects are covered in the following sections:

Relationships of the Informal Sector to Itself and the Formal Sector;

Factors Affecting the Competitiveness and Potential of the Informal Sub-sectors;

Potential for the Development of the Informal Sector

Theory of the Self-employed/Family Enterprise; and

Interpretation of a Decrease in the Size of the Informal Sector Relative to the Formal Sector.

We then conclude the paper with a discussion of the Changes in the Indonesian Informal and Formal Sectors by Main Industry from 1980 to 1985 to 1990.

Although numerous definitions of the informal sector are used, in this essay we use the definition of the Indonesian Biro Pusat Statistik (Central Bureau of Statistics), i.e. that the informal sector is composed of self-employed persons and self-employed persons plus family workers.[2] By using this definition we exclude other micro-enterprises which employ wage labour. This makes informal sector enterprises qualitatively different from other enterprises, namely that it must be unprofitable for them to employ wage labour, otherwise they would do so. The main advantage of this definition is that it enables us to measure the size of the informal sector. Another advantage is, that like another definition based on

the maximum number of employees allowed in an informal sector enterprise, it enables us to make cross-country statistical comparisons of informal sectors. The other informal sector definitions are usually based on multiple characteristics or on the enterprises being unregistered with the government or engaged in semi-illegal and illegal activities, which do not facilitate cross-country comparisons. For a discussion of definitions see Turnham, pp. 10-16, and Lubell, pp. 17-19.

Informal Sector Employment: by Choice or Required for Survival because of a Lack of Alternative Employment Opportunities?

A central question addressed in this essay is are informal sector members mainly persons who are unable to find wage employment and therefore are "required" to join the informal sector as a means of survival in the light of the near non-existence of unemployment benefits in developing countries, or have many of them deliberately chosen to join the informal sector even though they could obtain wage employment at the going wage rate in formal sector enterprises? Another possibility is that many formal sector employees are earning and saving in order to eventually become self-employed businesspersons. The International Labour Office considers the persistence of the informal sector is due to the inability of other sectors of the economy to provide adequate incomes or employment opportunities to a rapidly growing labour force (Report of the Director-General of International Labour Office, p. 2).

In the 1970s with the influence of the Harris-Todaro model it was thought the informal sector was mainly a receptacle for the otherwise unemployed in densely populated countries. However, in recent years the predominant view has become that the informal sector is extremely heterogeneous with those in some sub-sectors earning incomes well above those of unskilled wage earners because of their ownership of financial and human capital and/or restrictions on entry into the sub-sector. (Mazumdar, p. 58, and Tokman, p. 1069). Most of the surveys on Latin America available show that the self-employed earn about 50 percent more than wage earners in informal activities. "In fact, the data suggest that the income of the self-employed compares favourably with that of wage earners in the formal sector, except those working for large establishments." Owners of small informal shops have higher incomes than all workers except those employed in the public sector (Tokman, p. 1069). Hemmer and Mannel agree concluding that case studies from various African, Asian and Latin American countries show that generally the incomes of the self-employed and small entrepreneurs in the informal sector are higher than those of wage employees in the formal sector (Hemmer, H., and C. Mannel, p. 1544).

Nakanishi in writing about the Philippines distinguishes between low and high productivity urban informal sectors as follows:

--low productivity: scavengers, junkshop helpers, self-employed fishermen, laundresses, construction workers, stevedores, maids, waiters, waitresses, security guards, house boys, manicurists, and vendors. They tend to be younger than those in the high productivity sub-sectors.

--High productivity: jeepney drivers, tricycle drivers, "sari-sari" storekeepers, junkshop owners, carpenters, dealers, painters, mechanics, electricians, and employed workers in small-scale firms (Nakanishi, p. 285 & 287).

Cole and Fayissa propose a taxonomy that can serve as the basis for separating the disadvantages from the advantages in terms of earnings and conditions of employment. They designate one grouping the Subsistence Labor Force (SLF) in which all low-wage, unprotected categories of employment have been aggregated. This grouping includes household servants, street vendors, miscellaneous services which involve little or no fixed capital and require little or no formal education or skills (including street parking supervisors, shoe shiners, street musicians, knife sharpeners, etc.), and menial labourers unprotected from competition of other menial labourers. At the other extreme is the Modern Labor Force (MLF) grouping composed of professional, technical clerical, blue-collar protected, and menial labourers protected from other menial labourers by trade unions, credential requirements, social security programs and other mechanisms. In between these two is the Informal Labor Force Grouping composed of owner/managers of small-scale, informal sector firms and/or working members of the owning family, blue-collar workers unprotected, and apprentices (Cole and Fayissa, 1991, pp. 782-3). The members of the MLF generally have higher earnings and conditions of employment than ILF members, which in turn are higher than those of SLF members. Using our terminology, the informal sector owner/managers have higher incomes than the menial unprotected workers in the formal sector but the street vendors and miscellaneous services providers in the informal sector have lower incomes than the menial protected and blue-collar workers in the formal sector.

Evers and Mehmet report on a special survey of the informal sector carried out during August-October 1992 in the Klaten Regency of Central Java. It covered a stratified area sample of 331 establishments (including self-employed persons) in the trade sector, both urban and rural, representing medium and small establishments, the latter being the largest group including self-employed petty traders and food vendors (Evers and Mehmet, p. 3). The Survey found that the gross daily income (gross daily revenue from trading minus direct costs as the cost of goods sold, wages of paid employees, transport cost and market fees paid, but including own labour cost and the cost of unpaid family members and capital depreciation)

from informal sector traders can be substantially higher for about half the female traders and three-fifths of the male traders than the government-set minimum wages. In other words many informal sector traders are earning more than they would earn as unskilled workers, and therefore it would not be surprising if they preferred to remain in the informal sector as traders rather than become unskilled workers. Ananta and Tjiptoherijanto reported on three studies which showed that vegetable sellers, pedicab drivers and recyclable materials collectors earned substantially more than the minimum wage in Jakarta in the mid 1980s (Ananta and Tjiptoherijanto, pp. 22-23) We cannot conclude that these traders are in the informal sector because of being forced there by a lack of other employment opportunities.

In June and July 1994 three Indonesian economists under my supervision conducted a survey of 177 self-employed persons in Semarang, the capital and largest city in Central Java Province. Traders of various types (the first ten types in Table 1) accounted for 123 of the sample with 31 persons being from the services sector (types 14-20). The remaining 23 persons (types 11-13) were producing or collecting goods. Persons interviewed were identified by visiting parts of the city looking for persons in these occupational groups, without a formal area sampling method. Because of this and because of the small size of the sample it cannot be considered to be representative, but can be used to indicate some characteristics of the population. The moderate age of the respondents is an indication that it biased in favour of older persons in these occupations. It was also biased in favour of males.

This survey like those mentioned above supported the hypothesis that there is a wide variation in informal sector incomes, with the average net income per day in this sample varying from Rp 1141 for scavengers to Rp 9692 for stationary prepared food/drink sellers (excluding the one sidewalk prepared food/drink seller in the sample). Considering that an unskilled worker at this time would earn approximately Rp 2000 per day, only the scavengers, craftspersons and laundrypersons earned less than this. Some of the scavengers had other jobs such as in agriculture and used scavenging as a source of supplemental income when required. The sidewalk non-food/drink sellers and the food and drink peddlers had the lowest incomes among the sellers, but their incomes were well above Rp 2000 per day. Table 2 shows the occupations grouped together in different ways, with only the scavengers and craftspersons having net incomes per day of less than Rp 2000. The various occupational groupings of sellers had especially high incomes, with the mobile sellers and non-food/drink sellers having the lowest incomes within the sellers' groupings.

The respondents were asked whether they had had other work or not during the last two years. If a person had had other work it was an indication that they were able to have

Table 1. Characteristics of Informal Sector Occupations in Semarang

No.	Type of Occupation	N	Sex[a]	Age[b]	Educat.[h]	Hrs Worked Per Day	Days Worked Per Week	Years in the Bus.	Other Work[c] in Last Five Years (% No)	Helpers[d]	GI Per day[e]	NI Per Day[f]
1	Mobile Prepared Food/Drink Sellers	47	83	35.47	1.81	6.77	6.85	10.13	70	0.06	28644	5334
2	Stationary Prepared Food/Drink Sellers	26	46	39.46	2.15	8.60	6.81	9.09	88	1.50	67010	9692
3	Food and Drink Peddlers	3	67	35.33	2.00	10.83	7.00	9.33	33	0.33	28333	4167
4	Mobile Non-food/drink Sellers	10	100	34.10	2.10	8.45	6.00	12.1	20	0.00	15200	4500
5	Stationary Non-food/drink Sellers	4	0	39.00	2.50	9.00	6.75	3.00	100	0.00	37500	6313
6	Non-food/drink Peddlers	1	100	27.00	2.00	10.00	7.00	14.00	100	0.00	45000	5000
7	Sidewalk Prepared Food/Drink Sellers	1	100	20.00	2.00	7.00	7.00	5.00	0	0.00	60000	10000
8	Sidewalk Non-food/Drink Sellers	10	80	37.50	2.90	9.95	7.00	10.80	60	0.00	7250	3750
9	Mobile Non-prepared Food/Drink Sellers	11	91	41.09	1.91	9.86	6.82	23.36	91	0.00	19091	6364
10	Stationary Non-prepared Food/Drink Sellers	10	0	45.20	2.00	7.05	7.00	10.20	90	0.00	27500	5525
11	Scavengers	11	27	47.36	1.27	6.68	5.00	2.91	55	0.00	2041	1141
12	Miners	9	78	40.56	1.56	7.44	7.00	8.78	33	0.44	6667	3444
13	Craftspersons	3	100	53.67	1.67	11.33	6.00	10.00	0	0.00	2167	1167
14	Parking Attendants	6	83	31.17	3.00	5.17	6.83	7.67	67	0.00	12500	2500
15	Laundry Persons	1	0	40.00	2.00	4.00	7.00	6.00	100	0.00	3000	1500
16	Pedicab Drivers	4	100	52.75	1.75	7.75	6.50	15.75	0	0.00	3750	2500
17	Coolies	5	100	36.80	2.40	11.20	6.40	9.80	40	n.a.	6200	4760
18	Workshop Owners/Operators	1	100	31.00	1.00	9.00	6.00	8.00	100	0.00	20000	5000
19	Minstrels	4	100	25.75	3.50	3.50	6.25	4.25	25	0.50	5375	4750
20	Other Service Providers	10	90	33.00	1.90	4.30	6.70	9.70	60	0.40	8300	4790

a. Percentage male.

b. In years.

c. The percentage of respondents who had no other work during the last five years.

d. The number of persons assisting with this business. These are the average numbers.

e. Gross income per day in Rupiah.

f. Net income per day in Rupiah.

h. Refer to Table 2.

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Table 2. Characteristics of Informal Sector Occupational Groupings in Semarang

No.	Occupational Groupings [g]	N	Sex [a] (% male)	Age [b]	Educat. [h]	Hrs Worked Per Day	Days Worked Per Week	Years in the Bus	Other Work [c] in Last Five Years (% No)	Helpers [d]	GI Per Day [e]	NI Per Day [f]
1	Mobile Sellers	72	86	36.01	1.88	7.69	6.74	12.44	65	0.06	25531	5322
2	Stationary Sellers	51	41	39.78	2.29	8.56	6.88	9.09	82	0.76	45093	7451
3	Prepared Food/Drink Sellers	74	70	36.66	1.93	7.42	6.84	9.69	76	0.57	42547	6928
4	Non-Prepared Food/Drink Sellers	21	48	43.05	1.95	8.52	6.90	17.10	90	0.00	23095	5964
5	Food/Drink Sellers	98	65	37.99	1.94	7.76	6.86	11.27	78	0.44	37944	6637
6	Non-Food/Drink Sellers	25	76	35.96	2.48	9.20	6.56	10.20	52	0.00	16780	4510
7	Scavengers	11	27	47.36	1.27	6.68	5.00	2.91	55	0.00	2041	1141
8	Miners	9	78	40.56	1.56	7.44	7.00	8.78	33	0.44	6667	3444
9	Craftspersons	3	100	53.67	1.67	11.33	6.00	10.00	0	0.00	2167	1167
10	Mobile Service Providers	14	93	38.43	2.50	7.50	6.43	9.64	29	n.a.	5036	3879
11	Stationary Service Providers	7	86	31.14	2.71	5.71	6.71	7.71	71	0.00	13571	2857
12	Service Providers	31	90	35.03	2.35	6.06	6.58	9.23	48	10.10	8016	3942

g. Occupational grouping are as follows:

Grouping 1 includes types of occupations 1,3,4,6, & 9; Grouping 2 includes types of occupations 2, 5, 7, 8, & 10; Grouping 3 includes types of occupations 1, 2, & 7.

Grouping 4 includes types of occupations 9 & 10; Grouping 5 includes types of occupations 1, 2, 3, 7, 9, & 10; Grouping 6 includes types of occupations 4, 5, 6, & 8

Grouping 7 refers to type of occupation 11; Grouping 8 refers to type of occupation 12; Grouping 9 refers to type of occupation 13

Grouping 10 includes types of occupations 15, 16, 17, & 19; Grouping 11 includes types of occupations 14 & 18; Grouping 12 includes types of occupations 14 – 20.

h. Did not complete primary school = 1, primary school graduate = 2, junior high school graduate = 3, senior high school graduate = 4, college/university graduate = 5. These numbers are the average of 1 through 5 corresponding to the respondents educational levels.

For other notes see table 1

other employment and was some indication that they had chosen this occupation over the previous employment, although this logic is not valid for persons engaged in various occupations dependent on the employment opportunities at different parts of the year. It is very common in Java for persons to be engaged in more than one occupation at different times of the year, as apparently was the case with many of the scavengers. Also all three of the craftspersons with their low net incomes were also working in agriculture.

Evers has reported that research on low income groups in Southeast Asian cities shows that households obtain about 50% of their household needs from wages, 30% from informal sector activities and 20% from subsistence production. In accordance with this argument it is unwise to put the formal, subsistence, and informal sectors at different levels. There are a lot of households which generate income from more than one of these sectors (Evers, 1991, p. 28-29). In a survey of 947 traders in 1987-88, one third were pursuing their business as off-farm employment, as they also worked on their own farm. Of all the married women traders for which they had complete data, 60% used trade as off-farm employment. The survival strategy of combining trade with various other income earning activities is pursued by other poor households in Java (Evers, 1989, pp. 14-15).

To summarise there are some sub-sectors of the informal sector which absorb many persons unable to find wage employment. This is because the barriers to entry into the sub-sectors are low because little financial and human capital is required to compete and there are no meaningful manmade barriers. In these subsectors earnings will usually be low in comparison with subsectors where considerable financial or human capital are required or there are meaningful manmade barriers to entry, even though these may apply mainly to specific locations such as the threat of violence limiting the number of sellers at a particular stoplight or sidewalk.

Relationships of the Informal Sector to Itself and the Formal Sector[3]

There is much variation in the relationships between the sub-sectors of the informal sector and between the informal sub-sectors and the formal sub-sectors, but most informal sub-sectors are connected with either producers or consumers in the formal sector. Informal sector establishments buy from or sell commodities to formal sector enterprises, including as 'commission sellers'(Bromley, p. 1165).

Few informal sector commodities (goods and services) are exported and therefore they must sell in the domestic market, which is limited in size. Exceptions are some handicrafts and sales to tourists which can be considered to be exports.

Non-exportable commodities may compete with formal sector commodities, may be sold to formal sector employees, or may be

inputs sold to formal sector enterprises. In the last two cases the growth of the formal sector directly affects the demand for informal sector commodities. Common examples of formal sector employees purchasing informal sector commodities are the purchasing of meals from food vendors and pedicab or motorcycle (ojek) "taxi" services. A common type of formal sector purchasing of commodities from informal sector producers even in rich countries is the subcontracting of part of the production process to the informal sector. For example clothing, footwear, or parts of them being produced by households with the final assembly and finishing being done in formal sector factories. A borderline case of informal sector members is that of manual labourers and construction workers waiting around to sell their mainly their labour services as sub-contractors to do particular jobs. If informal sector activity is growing rapidly in large cities through the demand factor we can also expect that informal sector activity will also grow rapidly if it is not inhibited by government regulations. However, when eventually labour shortages in the economy emerge and real wage rates rise and jobs are easy to get, more and more informal sector activity will be replaced by the formal sector. The formal sector also positively affects the informal sector by providing training and opportunities for workers to earn to save which enables them to start up their own businesses (Field, p. 67).

For informal sector (I.S.) commodities directly competing with formal sector (F.S.) commodities the growth of the formal sector inhibits informal sector growth through competition. How competitive the informal sector is in this case greatly affects its growth. Many of the cottage industry products like clay pots and woven containers like baskets and bags made from leaves and plant materials have had much difficulty competing with their modern industry metal, plastic and synthetic fibre substitutes with the result that they have greatly suffered from competition with the formal sector. In some cases as discussed below, competition which adversely affects the informal subsector may be socially undesirable.

Sethuraman (1985, p.19) reports strong linkages between informal sub-sectors. A large proportion of informal sector income is spent on other informal sector goods and services. For example, a pedicab (becak) driver or a sidewalk (kakilima) trader buys her daily meals from small food vendors. Or a small trader in the market may hire a pedicab to transport her goods to the market, in which case a banning of pedicabs would increase her supply costs.

Informal sector retailers are very important sources of outlets for the hugh variety of products from informal manufacturing establishments. If only a few big stores are selling goods there will be little variety of "brands" compared with having hundreds and thousands of sellers in the market. It is efficient for micro-sellers to sell the products of micro-producers, but frequently not efficient for large stores to do so. Because consumers generally like to have

more product variety, having a large number of micro-sellers is attractive. Therefore in many cases policies and regulations which damage micro-sellers also damage micro-producers by decreasing the demand for their products.

In Indonesia the Asian Development Bank assisted Integrated Irrigation Sector Project field surveys have indicated that there is a shortage of young farmers and farm labourers to work the farms of the irrigated areas of southern Central Java because of widespread rural-urban migration, probably in most cases to work in the informal sector. There is a strong likelihood that many persons are moving from rural employment with higher value in social terms to urban informal sector employment with lower value in social terms, resulting in a net loss in social terms. This is because in rural areas with labour shortages the opportunity/social cost of the lost labour is positive and significant because it adversely affects production or necessitates labour-saving mechanisation, whereas in the urban areas many of these migrants move into sectors where their social marginal productivity is low because they are causing the incomes of others in the same urban informal sub-sector to decrease by almost the same amount as their incomes, and are worsening urban congestion, pollution, and other problems. More research is needed on this question.

Factors Affecting the Competitiveness and Potential of the Informal Sub-sectors

Many factors affect the competitiveness and potential of the informal sub-sectors relative to their formal sector counterparts. In formulating policies and programs affecting the informal sub-sectors it is important to estimate whether under conditions of fair/healthy competition they can compete with their formal sector counterparts and their potential for survival and development. We now list and discuss some main factors affecting their competitiveness.

1. Divergences between social and private costs affect the competitiveness of I.S. sector establishments relative to F.S. establishments. Some examples of possible divergences are: For many I.S. establishments the private cost of loan capital is higher than the social cost; the costs of licences and other non-production costs relative to the size of their business are higher than for larger establishments; For I.S. establishments the private cost of labour is closer to the social cost than for F.S. establishments whose private cost of labour is commonly greater than the social cost; I.S. establishments are more likely to be subject to monopsonistic buying of their products and monopolistic selling of their inputs; through their legal and illegal use of public space such as sidewalks, parks and roads their private cost may be less than the social cost, but this favourable factor may be offset by insecurity of tenure and extra costs; unjustified hindrance of their use of public facilities makes their

private cost greater than the social cost. Also the I.S. commonly has little access to government facilities and "the government has made many decisions that eliminate opportunities for the community to work in the informal sector, without providing adequate alternatives or guidance" (Rachbini, 1991, p. 52). If the ratio of private costs to social costs of production for informal sector enterprises is higher than for formal sector enterprises, ceteris paribus, the development of the informal sector relative to the formal sector will be less than is socially optimal. The ratios of private to social costs of production of informal sector enterprises relative to formal sector enterprises varies by sub-sector and location, with the informal sector in some sub-sectors and locations being underdeveloped in social terms and overdeveloped in others. In Indonesia and in general much more analysis is needed into the question of the social desirability of the informal sub-sectors by location and the policy implications of this.

In discussing the 'marginal economy' characteristics of prostitution, gambling and street-trade in Jakarta, Drs. Soetjipto Wirosardjono replied that "these activities are marginal in the sense that the level of income derived from these activities is systematically never sufficient to enable those economic activities to grow. Any profit gained must be 'distributed' to people delivering different services, i.e. to security officials as costs of illegality and to rehabilitation officers who supervise health programs for the prostitutes" (Soetjipto Wirosardjono, p. 65).

2. Some factors tending to make micro-enterprises competitive are:

--Great mobility of individuals (K. Sjahrir, p. 80);

--Labour is efficiently used because self-employed and family labour is not paid a wage greater than the social cost of labour; labour is used as a maximum without exerting heavy pressures on capital or on foreign exchange (Tokman, 1979, p. 1066);

--Widely scattered customers and sources of supply, especially when the customers or suppliers are quite immobile so they need small traders to come to them;

--Poor people cannot afford to purchase in large quantities and have poor storage facilities. This influences them to make purchases frequently and in small quantities.

--Seasonal sources of supply and demand varying by geographic area;

--Demand or supply only for short periods during the day like food stalls, newspapers, etc.;

--Access to space which brings sellers close to customers such as roads, sidewalks, inside buildings, etc.

--Knowledge about individual customers so I.S. establishments can give credit when they have the financial capability to give credit;

--Sellers can set different prices for different customers which enables them to increase their sales. As buyers they also can offer different prices to different sellers and lower their costs of purchases;

--Sellers can charge different prices for different qualities of a good with variable qualities;

--Activities take place in many different locations so control over employees is difficult and therefore suitable for self-employed and family establishments;

--Production must be close to the raw material supply which is supplied in small quantities in many different locations;

--Production must be close to the market which is very small, such as breadmaking, ice cream (perishable products) and some other foods, some drinks, very bulky finished products like buildings, making and supplying goods to order, many services;

--The social cost of labour is much lower during some seasons than others and the product can be made efficiently with little machinery and equipment;

--A high quality product is produced which cannot be mass produced such as carvings, "ikat" cloth, batik cloth, paintings, decorative items from shells, etc.

Economic development affects the competitiveness of the informal sector relative to the formal sector both on the demand and supply sides. We now discuss some negative effects of development on informal sector development:

1. With higher incomes consumers demand higher quality and more sophisticated goods and services which are usually not efficiently supplied by the informal sector, resulting in consumers demanding factory rather than village made toys, meals in restaurants rather than street stalls, etc.

2. The spreading of television results in a decrease in demand for traditional type entertainment and an increase in demand for modern manufactured goods.

3. The increase in household appliances decreases the demand for household services such as laundry services and decreases the frequency of purchase of perishables.

4. With higher incomes consumers can afford to shop less frequently and purchase in larger quantities.

5. The increase in quality and safety standards and increased enforcement of the standards adversely affects informal sector producers.

6. The conversion of footpaths to roads results in an increased accessibility of households to public transport. This adversely affects demand for non-motorised transportation such as pedicabs and for mobile vendor services.

7. Increases in education result in increased access to formal financial institutions and decreased demand for traditional activities such as ceremonies.

8. Modernisation of the land tenure system and increased registration of land results in the increased use of real property as collateral for loans from the formal financial sector.

Development can also have some positive effects on informal sector growth, which we now briefly discuss.

1. An increase in incomes will result in an increase in demand for high quality art, which in the case of paintings, sculpture, literature, etc. is efficiently supplied by the informal sector.

2. The expansion of computers and computer networks increases the opportunities for self-employed persons to work from home.

3. The increase in demand for tourism creates some increase in demand for informal sector produced goods and services.

4. Increased per capita incomes result in increased demand for services, some of which can be efficiently supplied by the informal sector.

5. The spread of the formal banking system and increased ability of informal sector enterprises to utilise it with increased levels of education lowers the cost of finance to the informal sector relative to the formal sector.

Potential for the Development of the Informal Sector

Before formulating program, projects and activities (PPAs) to facilitate informal sector development it is very important to analyse the informal sub-sectors' needs, problems and potential for development so resources are not wasted in promoting sub-sectors with no potential or in attacking trivial problems. The isolation of some regions will make

self-employed and family enterprises more viable than in accessible regions. Poor roads and lack of roads may result in I.S. transport being viable, such as carrying goods by horseback and oxcart. In some areas the construction of paths for bicycles, motorcycles, and horses and oxcart roads will greatly increase the activity of the I.S. and induce farmers to change from almost full subsistence farming to partial production for the market. There likely is a large potential for informal transportation sector development in Irian Jaya and other regions with very few roads. There probably is also a potential for improving the skills of artisans and technicians such as seamstresses, weavers, repair persons building tradespersons, etc. in many areas.

In analysing the potential for development it is very important to distinguish between disguised unemployment and underemployment. Although there are different definitions of underemployment, I use what is probably the most common definition, i.e. one minus the ratio of the number of hours worked to the number of hours a person desires to work for an individual, and the equivalent for a group. So if a person works 30 hours a week but desires to work 40 yours, her underemployment is 1 - 30\40 = 0.25, or 25 percent. When informal sector employees are waiting long hours for customers there is little or no underemployment in terms of hours worked, but there may be extensive disguised unemployment, in the sense that some employees could be taken away and output would not fall. Examples of disguised unemployment are some traders, suppliers of repair services, day labourers waiting to be called to work near the workplace, family enterprises, and some offices where profit maximisation is not the objective. Both underemployment and disguised unemployment indicate the presence of surplus labour which can be mobilised for development.

Negative marginal productivity of labour also may exist, commonly because of the overuse of a common resource such as coastal areas for fishing, forests, pastures, and urban space which causes congestion. There also may be negative productivity in offices with a fixed number of employees, where work created to justify the existence of the employees such as the formulation of additional red tape in some government offices has a negative productivity in social terms.

If the social cost of labour is zero in a sub-sector because of disguised unemployment or underemployment, labour-saving measures which have a social cost should not be introduced unless they increase the output of the scarce resource (soil, forest, space, etc.). This is because the labour-saving measure has a social cost but the saving of the labour does not save any social cost, so the social cost increases. However, the social cost of labour is rarely zero. If the social cost of labour is less than the private cost of labour but greater than zero, such labour-saving measures may be attractive in private terms but not in social terms

especially in the formal sub-sectors which have paid regular employees. If the labour-saving measure also causes an increase in output of the scarce resource it will be more attractive, but still may not be attractive in social terms even though it is attractive in private terms. An example of this is the adoption of tractors which replace labour but increase output per unit of land by making possible three crops a year instead of two--which can be socially attractive or unattractive depending on the net increase in social costs from using the tractors (the social cost of the tractors minus the social cost of the labor saved) compared with the increase in social benefit from the increase in agricultural output.

In the case of negative marginal productivity of labour because of the overuse of a common resource, clearly the amount of labour used should be decreased in a way which results in a decrease in the use of the resource so that the social product increases. In the case of overfishing, the mechanisation of boats which saves labour but results in even more overexploitation of the resource is socially very undesirable. What is needed is some development activity which increases the productivity of the limited common resource--such as perhaps stocking the lake with juvenile fish in the case of an overexploited lake, or replanting denuded hillsides with saplings in the case of denuded erosion-prone hillsides. In this latter case more labour can be used productively, not to cut down the forest, but to replant trees and undertake other anti-erosion measures such as building bench terraces and gully plugs.

In a family establishment with a fixed number of unpaid family workers, to maximise the utility (happiness) of the family from the work, the family should use the labour for an additional hour as long as the private marginal product of that hour in terms of utility created is greater than the marginal disutility from the additional hour of work, even though the marginal product of the labour per hour in money terms is less than the minimum hourly wage rate. A government office with a fixed number of employees trying to maximise its social product should use the labour fully as long as its marginal social product is greater than zero, even though the marginal social product in money terms is less than the hourly wage rate.

Theory of the Self-employed/Family Enterprise

Self-employed/family enterprises presumably maximise their welfare given their labour supply. Work is shared by family members and they work as long as they want to given the opportunities to increase their incomes from additional work. If all enterprises were family enterprises there would be no open unemployment in a society. Capitalist enterprises in theory maximise their profits given the supply of labour at the going wage rate and do not necessarily fully use the

labour available in the society. This makes these two types of enterprises qualitatively different. Some extended family and tribal and other groups may also maximise their welfare given their supply of labour. Urban family enterprises are similar to family farms in that family members share the work of the enterprise and can in most cases vary the number of hours which can be worked with a positive productivity.

If a family enterprise with only unpaid family workers does not hire regular workers, it is an indication that it is unprofitable for it to do so. This may be an indication that the enterprise is not able to fully utilise the family labour already available and pay them the market wage (even if in the form of shared income). We cannot assume that self-employed persons have the alternative of becoming regular employees in other firms, because the market wage rate may not fall enough for the labour market to clear, probably because of the efficiency wage rate being above the market clearing wage rate. This is not to deny, however, as is shown above, that many prefer self-employment to wage employment.

Interpretation of a Decrease in the Size of the Informal Sector Relative to the Formal Sector

A decrease in the proportion of people working in the informal sector relative to the formal sector is an indication that the proportion of people working receiving the market wage rate is increasing. The number of persons in the informal sector is positively related to the degree of disguised unemployment in the non-agricultural sectors because disguised unemployment is found mainly in the informal sector enterprises, not the formal sector ones. This is true especially with respect to the number/proportion of the labour force who are unpaid family employees. Therefore an increase in the number of employees in the formal sector relative to the informal sector is an indication that disguised unemployment has decreased relative to employment, although it still could have increased in absolute terms if the informal sector grew.

In a formal profit maximising enterprise with regular employees theoretically the firm is always employing labour up to the point at which its marginal revenue product (marginal product in money terms) is equal to the wage rate. Therefore if a worker left the output would always fall. This is not necessarily the case in a family enterprise as the work may be shared among the family members with them working on average less than the normal number of hours for that particular economic activity. As is the case in the Lewis Model with Surplus Labour in the traditional sector, in some family firms it is likely that if one of the family members left the family firm to take another job, the remaining family members would work longer hours so the total number of hours worked might not decrease, and therefore the output might not fall. In other words it might be possible to take away a worker

without the family firm's output falling--the situation of disguised unemployment.

Changes in the Indonesian Informal and Formal Sectors by Main Industry from 1980 to 1985 to 1990

Using the Indonesian 1980 and 1990 Census data and the 1985 Inter-census Population Survey data (SUPAS) we have compared changes in the number of persons ten years old and over working in informal and formal sectors from 1980 to 1985 to 1990. This information is shown in Tables 3 - 5 below for the whole population, males and females. We are particularly interested in learning about the rates of growth of the informal and formal sectors of the main industries of the economy from 1985 to 1990 and the rate of growth of the informal sector from 1985-90 compared with 1980-85. As the Indonesian economy develops and gradually changes from a labour surplus to a labour shortage economy, we expect the relative size of the informal sector will decrease as has happened in other countries with economic development. Therefore in general a slower rate of growth of the informal sector relative to the formal sector is considered to be an indication that the economy is progressing towards a labour shortage economy. However, a slowdown in the growth rate of the informal sector may also be partly caused by increased government restrictions on the sector, such as the increasing restrictions on and banning of pedicabs and some sidewalk and street trading. Also the growth of the informal sector may decrease relative to the formal sector because formal sector enterprises are becoming more competitive relative to informal sector enterprises.

The first thing to be noted from the tables is that informal sector employment using 1990 figures is very important in the aggregate (64% of all employees and 44% excluding agriculture and mining) with females accounting for 38% of informal sector employment and 36% of total employment. Informal sector employment is important in all sectors except electricity and banking and finance, ranging from 15% of total employment in mining to 28% in manufacturing to 84% in agriculture and trade. Eighty-six percent of those in the informal sector were employed in agriculture and trade, with 5% and 4% being employed in manufacturing and other services respectively, with these four sectors accounting for 95% of total informal sector employment.

Table 3 shows that the percentage change in informal sector employment from 1985-90 at 6 percent was much lower than from 1980-85 except for the transportation, construction, other services, electricity and banking and finance sectors. We can ignore the later two sectors because informal sector employment in them is insignificant. The most important conclusions which can be drawn from Tables 3-5 is that the rate of growth of informal sector employment in the two largest and fourth largest agriculture, trade and manufacturing sectors sharply decreased from 1980-85 to 1985-

TABLE 3. **The Indonesian Informal and Formal Sectors by Main Industry, 1980-1990** [a]

Sector	Number (1990 in Ths)	Percentage (1990)	Percentage Change 1980-85	Percentage Change 1985-90
1. **Agriculture**				
Informal S.	30,141	84	20	4
Formal S.	5,920	16	6	11
Total	36,061	100	18	6
2. **Mining**				
Informal S.	109	15	(17)	(35)
Formal S.	620	85	32	148
Total	729	100	7	75
3. **Manufacturing**				
Informal S.	2,289	28	12	(11)
Formal S.	5,958	72	33	84
Total	8,247	100	23	42
4. **Electricity**				
Informal S.	9	6	(26)	41
Formal S.	135	94	9	112
Total	144	100	5	106
5. **Construction**				
Informal S.	725	25	(14)	59
Formal S.	2,227	75	44	36
Total	2,951	100	26	41
6. **Trade**				
Informal S.	8,959	84	36	9
Formal S.	1,676	16	71	48
Total	10,635	100	39	14
7. **Transportation**				
Informal S.	1,249	47	31	46
Formal S.	1,392	53	34	26
Total	2,640	100	33	35
8. **Banking & Finance**				
Informal S.	20	3	(28)	28
Formal S.	669	97	(17)	184
Total	689	100	(18)	174
9. **Other Services**				
Informal S.	1,982	21	(20)	10
Formal S.	7,492	79	32	15
Total	9,474	100	16	14
10. **Total**				
Informal S.	45,482	64	19	6
Formal S.	26,088	36	25	34
Total	71,570	100	21	15

TABLE 4. **The Indonesian Informal and Formal Sectors by Main Industry, 1980-1990 (Male) [a]**

Sector	Number (1990 in Ths)	Percentage (1990)	Percentage Change 1980-85	Percentage Change 1985-90
1. Agriculture				
Informal S.	19,374	83	13	4
Formal S.	4,045	17	2	18
Total	23,419	100	11	6
2. Mining				
Informal S.	63	11	(26)	(47)
Formal S.	531	89	34	131
Total	593	100	5	71
3. Manufacturing				
Informal S.	999	22	2	(4)
Formal S.	3,548	78	35	66
Total	4,547	100	22	43
4. Electricity				
Informal S.	8	6	(28)	56
Formal S.	123	94	12	105
Total	131	100	8	101
5. Construction				
Informal S.	710	25	(14)	59
Formal S.	2,167	75	44	35
Total	2,876	100	26	41
6. Trade				
Informal S.	4,356	79	25	16
Formal S.	1,137	21	65	37
Total	5,493	100	31	20
7. Transportation				
Informal S.	1,240	48	31	46
Formal S.	1,349	52	35	24
Total	2,589	100	33	34
8. Banking & Finance				
Informal S.	16	3	(33)	36
Formal S.	513	97	(19)	170
Total	529	100	(20)	162
9. Other Services				
Informal S.	1,211	21	(23)	12
Formal S.	4,696	79	24	6
Total	5,907	100	11	7
10. Total				
Informal S.	27,976	61	12	8
Formal S.	18,108	39	23	29
Total	46,084	100	15	15

TABLE 5. **The Indonesian Informal and Formal Sectors by Main Industry, 1980-1990 (Female)** [a]

Sector	Number (1990 in Ths)	Percentage (1990)	Percentage Change 1980-85	Percentage Change 1985-90
1. **Agriculture**				
Informal S.	10,753	85	35	6
Formal S.	1,875	15	15	(1)
Total	12,628	100	32	5
2. **Mining**				
Informal S.	48	36	16	(2)
Formal S.	87	64	11	325
Total	135	100	15	94
3. **Manufacturing**				
Informal S.	1,293	35	20	(16)
Formal S.	2,412	65	31	120
Total	3,705	100	24	41
4. **Electricity**				
Informal S.	1	7	(10)	(19)
Formal S.	13	93	(25)	249
Total	14	100	(22)	187
5. **Construction**				
Informal S.	13	18	(20)	24
Formal S.	57	82	51	35
Total	70	100	29	33
6. **Trade**				
Informal S.	4,620	90	46	3
Formal S.	539	10	89	77
Total	5,159	100	48	8
7. **Transportation**				
Informal S.	5	11	0	(5)
Formal S.	40	89	12	107
Total	45	100	9	84
8. **Banking & Finance**				
Informal S.	4	2	(3)	2
Formal S.	155	98	(5)	242
Total	159	100	(5)	224
9. **Other Services**				
Informal S.	772	22	(14)	6
Formal S.	2,799	78	50	34
Total	3,571	100	26	27
10. **Total**				
Informal S.	17,510	69	33	3
Formal S.	7,976	31	33	45
Total	25,486	100	33	13

a

The number of people working in the informal sector is defined as the population 10 years of age and over who worked during the previous week as self employed persons and family workers assisting self employed persons, while those in the formal sector worked as employers and employees.

"No answer" by respondents were allocated proportionately to all sectors.

Source: Calculated from Indonesia 1980 and 1990 population census data and SUPAS 1985 data, all from the Central Bureau of Statistics (Biro Pusat Statistik).

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90 and that from 1985-90 informal sector employment growth was less than a fifth of formal sector employment growth except for females in the agriculture sector. Particularly striking is the 1985-90 negative growth in informal sector manufacturing employment at the same time total employment in manufacturing increased 42%. This is an indication that household manufacturing activities are on the decline perhaps because of increased competition from formal sector enterprises and an increase in more attractive employment opportunities elsewhere including in the formal manufacturing sector. However, we do not know what is happening to small manufacturing enterprises relative to medium and large scale ones. Informal sector employment growth in Latin America--which increased approximately 56 percent from 1980 to 1987--and in sub-Saharan Africa which increased approximately 6.7 percent per year from 1980 to 1985--were substantially higher than in Indonesia (The Dilemma of the Informal Sector, p. 10).

The trade and other services sectors are important as absorbers of otherwise unemployed persons because they contain sub-sectors into which persons with little education and capital quite easily enter. The growth of informal trade sector male employment from 1985-90 at 16% is about 5 times higher than that of the female employment growth equivalent and slightly higher than total male employment growth. The percentage increase in male employment in the informal other services sector is about double that of female employment. This is in contrast with a percentage increase in females in the formal part of this sector almost six times that of males from 1985-90. The rapid growth of male informal sector employment in these two sub-sectors is probably partly due to the burgeoning of district small enterprises such as mechanical and electrical repair workshops and the launching of small rural enterprises by the rising number of junior and senior high school graduates who are unable to find a job in towns but are unwilling to go back to farming (Mauer, p. 110).

The more rapid male informal sector growth is an indication that males are finding it more difficult to obtain employment in the formal sector than females. This hypothesis is supported by the 45% increase in female formal sector employment from 1985-90 compared with the 29% increase for males and 120% increase in formal sector manufacturing employment for females compared with 66% for males. This pattern of a higher rate growth of female employment in manufacturing than male employment is common in rapidly growing labour intensive manufacturing export oriented economies like Indonesia.

The electricity, construction and transportation industries are dominated by males with the latter two having sizeable informal sectors, especially transportation. The construction and transportation industries were unusual because they were the only sectors for which the 1985-90 rate of growth of informal sector employment was both greater than in 1980-85 and greater than the 85-90 rate of growth of formal sector employment, and the rate of growth of the informal sector employment increased and formal sector employment decreased from 1980-85 to 1985-90.

Table 6 below shows that the rate of growth in number of vehicles slowed down from 1980-85 to 1985-90 but was still high, especially for buses. In Indonesia it is common there are one or more professional drivers for most buses and trucks and having a professional driver for passenger cars is also common. If there were one professional driver for every passenger car, bus and truck in 1990 2,806,056 drivers would be employed, which is more than the total number of persons working in the transportation sector as shown in Table 3. The length of roads maintained by level 2 regency governments (equivalent of municipalities and shires) also sharply increased from 98,225 kilometres in 1980 to 155,812 in 1985 and 225,611 kilometres in 1990, increases of 59% and 45% per five year period (Biro Pusat Statistik, Statistik Indonesia.

Table 6. Number of Registered Vehicles by Type in Indonesia

Year[a]	Passenger Cars	%Ch	Buses	%Ch	Trucks	%Ch	Motorcycles	%Ch
1980	639,464		86,284		473,831		2,671,978	
1985	990,651	55	227,304	163	845,338	78	4,794,517	79
1990	1,313,210	33	468,550	106	1,024,296	21	6,082,966	27

[a] The data are for the end of the year. The % Ch is the percentage change between 1980 and 1985 and 1985 and 1990.

Source: Biro Pusat Statistik, Statistik Indonesia 1982, 1987 and 1993.

It is difficult to explain the marked increase in importance of the informal transportation sector employment relative to the formal sector. Possible explanations which need to be investigated are possible large increases in the number of individually owned and operated buses and trucks and in privately operated motorcycles (ojeks) to transport passengers for money. Since Jakarta banned becaks (pedicabs) in 1979 and other cities have restricted becak operations, the number of ojeks used to transport passengers for money has markedly increased (Dimitriou, pp. 36-39 and 182-3). Another possible factor is the slowdown in the rate of growth of transportation sector real GDP, a decrease from a 49.7% increase from 1980 to 1985 to a 38.8% increase from 1985 to 1990.[4]

The very rapid growth of the construction informal sector and decrease and decrease in the growth rate of the construction formal sector from 1980-85 to 1985-90 are difficult to explain, especially given that the rate of growth of construction real GDP increased from 27.9% from 1985 to 1990 to 48.0% from 1985 to 1990. A possible explanation for part of the rapid growth of the informal sector employment in the transportation and construction sectors is that these are male dominated sectors, and therefore the slower growth in employment demand for males than females in the other sectors could be "pushing" males into the informal parts of these sectors.

NOTES

1.An earlier version of this paper titled "The Urban Informal Sector Is Mainly a Refuge for Otherwise Unemployed Workers in Labour Abundant Developing Countries: the theory and evidence with a special emphasis on Indonesia" was presented to The 24th Confernce of Economists, Adelaide, September 24 to 27, 1995.

2.This definition is very similar to that of the International Labour Office, which in a report defined the informal sector as "very small-scale units producing and distributing goods and services, and consisting largely of independent, self-employed producers in urban areas of developing countries, some of whom also employ family labour and/or a few hired workers or apprentices; which operate with very little capital, or none at all; which utilise a low level of technology and skills; which therefore operate at a low level of productivity; and which generally provide very low and irregular incomes and highly unstable employment to those who work in it."(The Dilemma of the Informal Sector: Report of the Director-General, p. 2).

3. The following five sections draw heavily from Rice, 1992.

4.Calculated from different years of Biro Pusat Statistik, Statistik Indonesia.

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