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An Accounting-Based Approach**

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**Abstract**

This paper discusses the estimation of a social accounting matrix that distinguishes between formal and informal activities for China and India for 2000 and 1998-99 respectively. Wage shares for the formal/informal employment for China and net domestic product shares for the formal/informal sectors for India are being applied as weights to the input-output tables and flow of funds tables provided by official statistics. While some estimation techniques used in this paper remain vulnerable to criticism, the proposed methodology is a first step towards an integrated approach to account for the dualism of many economies in the developing world. The results are important data input for any policy-driven CGE model for developing countries.

**Keywords:** informal sector, social accounting matrix, comparative economic systems, China, India

**JEL Classification:** E01, E26, P44

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## 1. Introduction:

One of the main obstacles economists face in their applied work on developing economies is the lack of consistent statistical data. Just imagine by how much our understanding of the growth processes in many developing countries would be enhanced if there was access to a statistical repertoire similar to that available for the United States or Germany. But too often economists are forced to resort to estimation methods that sometimes leave significant space for error. Nevertheless, the economist's job is to try to fill these gaps while keeping in mind that she has two main responsibilities: first, to exhaust all possible resources to find primary data provided by national statistics; and second, to document and explain all estimation procedures and to point out their limitations.

This paper attempts to overcome the lack of ready-to-use statistics and uses instead different estimation techniques to obtain the statistics necessary to build Social Accounting Matrices (SAMs) for the real sectors for China and India. The main contribution of this paper is that it constructs a SAM that differentiates between formal and informal economic activities. Across definitions, the informal sector is associated with those activities which are casual and where labor is frequently underutilized.

The existence of a significant informal sector in many developing countries is in fact one of the main culprits for the lack of economy-wide statistics. In recent years national statistical offices as well as international organizations such as the International Labour Organization and the Asian Development Bank have spent considerable effort to account for the informal sector in their published statistics. These efforts have been prompted as a result of an expanding informal sector in many economies despite sometimes good record of economic growth. The informal sector has proved to be an important contributor to job creation especially in the over-populated urban areas of developing countries.

International Labor Organization's 2004/5 report on *World Employment* and the 2005 Asian Development Bank's (ADB) *Key Indicators* for Asian economies show that "out of a total labor force of 1.7 billion in the DMCs<sup>1</sup>, around 500 million are underutilized in terms of being

either unemployed or underemployed...” (ADB, 2005)<sup>2</sup>; “during the 1990s, own-account and family workers<sup>3</sup> represented nearly two-thirds of the total non-agricultural labor force in Africa, half in South Asia, a third in Middle East...”; “In Latin America the urban informal economy was the primary job generator during the 1990s....urban informal employment in Africa was estimated to absorb about 60 per cent of the urban labour force and generate more than 93 per cent of all new jobs in the region in the 1990s” (ILO, 2005, chapter 2, p. 106).

The two reports show that there is an inverse relationship between the size of formal sector’s employment and poverty rates. The creation of better paid jobs is instrumental in achieving a decline in poverty rates around the world which remain high despite the recent period of global economic growth. As Fields (2005) remarks “poor are poor because they earn little from the work they do”<sup>4</sup>.

Stylized facts underline not only the abundance of labor in the informal sector but, as pointed out, its upward trend during the last decades in most of the developing countries even when growth has accelerated. The concern with jobless growth in developing countries is legitimate because long-run development is difficult to achieve without employment expansion in high productivity sectors. Evidence in support of a positive relationship between output and formal sector employment growth can be found in some fast growing Asian countries such as Korea or Taiwan (China), while others, such as India and Vietnam have failed to narrow the share of informal sector in total employment despite experiencing substantial growth (ADB Key Indicators Report, 2005 and Amin, 2002). The ILO report recommends that “in order to harness the development potential of structural changes, however, developing countries, in particular, must focus on a two-pronged strategy of improving the productivity of workers in dynamic *niche* industries and, at the same time, focusing on those sectors of the economy where the majority of labour is concentrated. This focus would give them the tools to move from low to high-productivity activities” (ILO, 2005, chapter 2, p.78). The present paper makes a step in this direction by accounting for the informal sectors in China and India and how they relate to the rest of the economy.

The first section introduces the Social Accounting Matrix. The next two sections document the construction and estimation techniques of the SAMs for China and India. The paper concludes with a discussion on trends in few variables of interest.

### **1.1 Social Accounting Matrix – a very brief introduction**

The rules behind the SAM originate in the accounting of input-output tables while its entries are derived from the National Income and Product Accounts and the Flow of Funds Accounts (Taylor, 2004). Pyatt (1991) provides an extensive discussion of the fundamentals of social accounting and rightly points out that the “social accounting matrix (SAM) is a framework both for models of how the economy works as well as for data which monitor its workings. Recognition of this duality is of basic importance for quantitative analysis”. In a sense the SAM is the main ingredient in both policy modeling and policy design and it has found fertile ground in policy work in developing countries.

Several rules and features characterize a SAM. The core idea of a SAM is that it captures economic transactions evaluated at one price among different institutional sectors such as the households, enterprises, government and the rest of the world. Each sector receives an income or a transfer which it may use for consumption, investment or savings. As an accounting rule the total for each row must equal the total for each column. Macroeconomic theory figures in the story through the relations it establishes in respect to output formation, transactions among sectors of the economy and pricing rules. The theory and the research topic determine what kind of SAM we build. Table 1 presents a self-explanatory SAM for an economy with formal/informal sectors.

**Table 1**

### **2. A Social Accounting Matrix for China for Year 2000**

This section describes the estimation of the formal/informal sector SAM for China. To compensate for the lack of official statistics that differentiate transactions and income between the two sectors we use the sectoral wage shares to derive an approximate size of informal and formal activities. More specifically, wage shares of regular and irregular employment are applied

to official statistics on final and intermediate consumption, value-added and the flow of funds table (physical transactions) from the national accounts published in *China Statistical Yearbook* for various years.

In order to calculate the wage bill for formal and informal employment two main ingredients are needed: the distribution of employment and wage levels in the two sectors. The first issue we face is that data on wages in the informal sector is not readily available. Instead, we use different proxies as explained shortly. Data on employment in formal or regular and informal or irregular activities is available from official sources however it tends to be fairly inconsistent and difficult to interpret. As an alternative we use adjusted statistics on employment from Ghose (2005) who addresses several caveats with the official statistics and estimates employment series for different types of enterprises. An in-depth discussion of types of employment is presented in a latter section, for now let's define the two concepts of regular and irregular employment as they appear in the aforementioned paper by Ghose (2005).

“regular wage-employment in the formal sector (henceforth formal wage-employment or simply formal employment), regular wage-employment in the informal sector (henceforth informal wage-employment) and self-employment. Together, these three categories make up what we call regular employment. Then there is the additional category of irregular employment (of migrant workers and urban laid-off workers). Irregular employment includes both casual wage-employment (in construction or in domestic service, for example) and self-employment (in street vending or in repair services, for example)” (Ghose, 2005, p. 5)

In order to avoid confusion about the definitions of formal/informal activities as provided by China's National Bureau of Statistics and used by Ghose (2005) the employment categories mentioned above are also associated with distinct types of enterprises. Formal sector, as understood in this paper, comprises of workers employed by both formal and informal enterprises as defined in the official statistics. Informal employment, on the other hand, includes only irregular employment. For example in the urban areas formal enterprises are made up of the traditional state-owned and collective-owned formal enterprises (TF) and the emerging private and foreign-owned formal enterprises (EF). In the rural areas formal employment is predominantly supplied by township and villages enterprises (TVEs). In addition, regular employment (or formal in the

terminology used here) includes those in informal enterprises in both urban and rural areas that are part of the *registered* small private enterprises (EP) and *registered* self-employment (ES). Employment under the rural responsibility system (RS) covers most of the rural employment assumed here to fall into the category of informal employment. Finally, there is irregular employment (IR) in both rural and urban areas. For our purposes formal employment includes formal workers as just defined plus those who are registered self-employed or employed in registered small private enterprises. The informal employment gathers the rest meaning the irregular employment and employment in connection with the rural responsibility system (RS).

## **2.1 Formal and Informal Employment and Wage Shares**

This section starts with the distribution of formal/informal employment by main economic sectors followed by the estimation of wage levels for various types of employment. Wage shares by formal/informal activities are calculated for four main sectors of the economy – agriculture, manufacturing, other industries and services – which are consistent with the input-output tables, value-added and final demand data provided by China's *National Accounts Statistics*.

### **2.1.1 Formal/Informal employment by sectors of the economy**

Table 2 presents the distribution of employment by rural and urban area based on Ghose (2005). Between 1990 and 2002 the share of informal or irregular employment in rural sector declined while the opposite took place in the urban areas. The decline in the share of formal urban employment was partially the result of the restructuring of labor abundant state and urban collective-owned enterprises. Additionally, migrant workers from the rural areas were mostly absorbed by irregular activities. In contrast, the share of formal sector in rural areas improved as a result of impressive growth in TVEs and out-migration of informal rural workers.

#### **Table 2**

Data on formal employment, self-employment and employment in small-private enterprises are available for the four sectors of the economy mentioned above for both rural and

urban areas. Workers that are part of the rural responsibility system are assumed to be primarily engaged in agriculture. The problem rests with rural and urban irregular employment which amounted to approximately 91 million workers or 12.6% of total employment in 2000, and which is not divided by sectors. To deal with this caveat we combine the information provided by Ghose (2005) for the shares of regular employment by sectors with the volumes of rural and urban irregular employment to obtain estimates for irregular employment by sectors. The main assumption is that irregular employment follows a distribution that resembles that of the formal employment.

Nonetheless, this method could still leave space for errors. To minimize potential errors, two additional criteria are used to select those sectors where irregular employment is likely to exist to a significant degree. First, existing information on the sectoral level of average wage allows us to identify activities with low productivity and therefore a higher probability of informal employment. The reasoning is that since the wage level should be related to the level of labor productivity, sectors with high average wage are also likely to have high productivity. A second criterion is to eye-ball those sectors where traditionally informal employment and low productivity exist. Based on these two criteria the main candidates are agriculture, construction, transportation and trade as well as other services<sup>5</sup>. The excluded sectors are the manufacturing and government services as well as financial, insurance and real estate services.

To obtain informal employment by economic activities the sectoral shares of formal employment are applied to the total volume of irregular employment in urban and rural areas respectively. Based on the above criteria the service sector is divided into “good” or formal and “bad” or *other services*, and only the later enters the calculation of the sectoral distribution of irregular employment. *The other services* sector includes trade, transport and other services. Other industries comprise of construction and mining and quarrying. The sectoral distribution of rural irregular employment is calculated according to:

$$L_{IR} = L_{IR} \sum_i \frac{L_{FR,i}}{\sum_i L_{FR,i}} = L_{IR} \left( \frac{L_{FRA}}{L_{FR}} + \frac{L_{FROI}}{L_{FR}} + \frac{L_{FROS}}{L_{FR}} \right) \quad (1)$$

where  $L_{IR}$  is total irregular or informal employment in rural areas or *IRR* column in table 1,  $L_{FR,i}$  is rural, formal employment for each of the three sectors,  $i$ , assumed to have informal economic activities; and *FRA*=formal rural *agriculture*, *FROI* =formal rural *other industries* and *FROS* =formal rural *other services*. It follows that  $L_{FR} = \sum_i L_{FR,i}$  is total formal rural employment in the *selected* sectors. A similar formula is used to calculate irregular employment in the urban area,  $U$ .

$$L_{IU} = L_{IU} \sum_i \frac{L_{FU,i}}{\sum_i L_{FU,i}} = L_{IU} \left( \frac{L_{UA}}{L_{FU}} + \frac{L_{UOI}}{L_{FU}} + \frac{L_{UOS}}{L_{FU}} \right) \quad (2)$$

Given the levels of regular/irregular employment obtained for each sector using (1) and (2) the employment shares for the informal and formal sectors respectively are set according to:

$$e_{I,i} = \left( L_{IR} \frac{L_{FR,i}}{\sum_i L_{FR,i}} + L_{IU} \frac{L_{FU,i}}{\sum_i L_{FU,i}} \right) / L_i \quad (3)$$

$$e_{F,i} = (L_{FR,i} + L_{FU,i}) / L_i \quad (4)$$

where  $L_i$  is total employment in sector.

Final estimates for the shares of formal/informal employment for the entire economy and for the three sectors of the economy – agriculture, other industries and other services -- are illustrated in table 3. During 1990-2002 the share of formal or regular employment in total employment has gained seven percentage points. The results are driven by an astounding 80 million rise in formal rural employment (mostly due to employment in TVEs) but also due to the decline in participation rate as shown by Fang (2004) and discussed by Ghose (2005). The migrant rural informal workers who did not find jobs in the formal sectors in the urban areas either ended up as informal urban workers or exited the labor force and are therefore not unaccounted for. It is also worth noting that following the restructuring of state-owned enterprises in 1996, the growth of formal sector employment has virtually stagnating.

**Table 3**

### **2.1.2 Wage levels by formal/informal activities and sectors of the economy**

Next step is to estimate workers' remuneration. Data on sectoral average wage for different types of formal enterprises is provided by *China Statistical Yearbook* (CSY). Data for wages practiced in TVEs is available from various editions of *China TVE Statistical Yearbook* published (in Chinese) by the Ministry of Agriculture<sup>6</sup>. Given their importance for further research in the profession, table A.1 in the appendix provides the average annual wage for main sectors of the economy by different types of enterprises. Average wage has grown most rapidly in the service sector and in particular in the emerging private enterprises. A quick comparison between agriculture and services across types of enterprises suggests that by 2002 average wage in the service sector is almost twice the level of wage in agriculture. Overall, wage levels in the private sector are considerably higher than wages in the traditional state enterprises.

In contrast to regular employment there are no official statistics available for compensation levels for those employed in registered small-enterprises and the registered self-employed or for the irregular workers in the informal sector. As a result some rough estimates are "guessed" based on statistics on income per capita and information obtained from several studies available in the literature.

Banister (2005a, 2005b) and BLS (1997) assume that wages for the urban and rural self-employed, which counted about 105 million workers in 2000 with more than 70 percent of this in rural areas, are an average of wages of staff and workers employed in public and private formal enterprises. At the first sight this approximation may seem to overestimate earnings of self-employed, especially when compared to other developing economies. But China's self-employed may hold a different, more successful story. Using data from a survey of 1,199 households from 60 villages across 6 rural provinces conducted at the end of 2000, Zhang et al. (2006) underline the dynamism of this type of enterprises which specialize in off-farm activities and are perceived as being an important source of income growth in the rural areas. A large majority of these small household businesses, usually located on home premises, are engaged in trading, transportation services or other services. The authors find that the average wage for self-employed is significantly higher than wages of public workers, however the dispersion of earnings among self-

employed is also more pronounced. A comparison of earnings for self-employed and workers in public and private enterprises is available also from Chen and Chang (2007) who conducted a survey for Eastern China and Taiwan during 2004. Based on their estimates the employer in the small enterprise sector earns twice as much as public workers in the urban areas and about three times as much as public workers in rural area. The pure self-employed, or the employee, on the other hand earns three quarters of what the public worker gets in the cities and roughly the same as the wage of the rural worker. Taking into consideration the information above, this paper estimates the wage of the self-employed and of those employed in small enterprises as an average of wage levels in public enterprises.

We turn our attention now to the estimation of income of irregular employment in urban and rural areas and those working under the rural responsibility system. In the rural area, irregular employment together with employment under the rural responsibility system accounted for almost 70 percent of total labor force in 2000. Using data on income per capita and household expenditure we can assume that the income earned by these workers should be sufficient to cover subsistence consumption for themselves and their dependents. Data on income per capita for rural households is provided by the *Basic Conditions of Rural Households* from CSY which divides income into three categories: reward of labors – those who receive a wage from being employed in a collective enterprise, TVEs and other enterprises –household business revenue and income from property and transfers. Based on these categories income earned by irregular workers -- those employed under the rural responsibility system and those who hold irregular jobs -- comes from household business income and transfers and property income. For 2000, the income for irregular workers calculated in this way comes to 2,444 Yuan. This estimate is close to indicators on basic consumption expenditures. For instance, statistics from the *Basic Conditions of Rural Households* approximate that the average per capita expenditure for consumption for 2000 was 1,670 Yuan while each laborer, on average, supported 1.5 persons including herself. Hence, the average income needed to be earned by each individual in order to provide basic consumption for herself and her dependents was approximately 2,539 Yuan which is very close to our estimate of the average income per capita for the rural households.

In the urban areas where income inequality is considerably higher (Ravallion and Chen, 2004) and regular employment is large, the use of average income per capita to approximate wages earned by irregular labor would lead to gross overestimations. Urban irregular employment includes predominantly the migrant rural workers but also the laid-off urban workers. These workers are engaged in casual or seasonal jobs, mostly construction, trade and other services. To get a sense of the magnitude of the income earned by irregular workers we can use data on households' income per capita by quintiles. The main assumption is that irregular workers will be situated at the bottom of the income distribution. China Statistical Yearbook 2001 shows that the average income per capita for the lowest quintile in 2000 was equal to 3,168 Yuan, and that each employee had to support financially 2.15 persons including herself. Hence, the income earned by a working individual at the bottom of income distribution in urban area had to be about 6,768 Yuan per year. It must be pointed out that this estimate is slightly higher than the average wage of staff and workers in urban collective-owned units<sup>7</sup>. In terms of basic consumption i.e. food and clothing, for urban households indicators show that in 2000 a worker spent on average 4,598 Yuans for herself and her dependents. Data on the Hunan province provided by Cooke (2005) estimates that the average income of migrant rural workers was 4,339 Yuan in 2000. Finally, data for average wage of migrant workers is available from China Income Distribution Survey conducted by the Chinese Academy of Social Sciences for 2002. Based on this source the self-employed and wage-earner migrant workers earn on average about  $\frac{3}{4}$  of average wage of all staff and workers (Du et al, 2006). Using the above sources we approximate the average wage of informal urban workers as being equal to three quarters of the lowest wage levels practiced by formal enterprises, in this case the urban collective-owned units.

The shares of total wage bill of informal and formal activities respectively in sector  $i$  can now be calculated according to:

$$\psi_{I,i} = \frac{\sum_{i,h} (L_{I,i,h} * w_{I,i,h})}{(\sum_{i,g} L_{F,i,g} w_{F,i,g} + \sum_{i,h} L_{I,i,h} w_{I,i,h})} \quad (5)$$

$$\psi_{F,i} = \frac{\sum_{i,g} (L_{F,i,g} * w_{F,i,g})}{(\sum_{i,g} L_{F,i,g} w_{F,i,g} + \sum_{i,h} L_{I,i,h} w_{I,i,h})} \quad (6)$$

where  $\psi_{I,i}, \psi_{F,i}$  are wage shares of informal and formal activities respectively in sector  $i$ ,  $L_{F,i,g}$  and  $w_{F,i,g}$  are levels of formal employment and wage respectively in sector  $i$  and enterprise  $g$ ;  $L_{I,i,h}$  and  $w_{I,i,h}$  are informal employment levels and wage respectively in sector  $i$  and enterprise  $h$ . Results for wage shares for formal/informal activities in each economic sector appear in table 4 below. Over the 1990s the presence of the informal sector has increased in services and other industries while it has slightly declined in the agriculture. These trends suggest once again the effect that migration from rural to urban areas has had on the structure of the Chinese economy. As it is true for most developing countries the rural-urban migration usually results in a rise in informal activities in the cities. For the overall economy however the formal sector's wage share has gained about 15 percentage points over the period. This result is attributed partly to the rise in registered self-employment, small enterprises and TVEs employment in the rural sector but also to the rapid increase in the gap between earnings of formal and informal workers.

#### **Table 4**

### **2.2 Main Building Blocks of China's SAM:**

This section reproduces the SAM in table 1 for China for year 2000. Given certain assumptions to be discussed along the way, the wage shares in table 4 are being used to separate the following transactions between formal/informal activities: the intermediate use of output which is part of the input-output table; the final use of output which comprises of final consumption by household sector, government, gross fixed capital consumption and net exports; the total value-added which counts in the compensation of labor, depreciation costs of fixed assets, net taxes on production and operating surplus or profits; and the flow of funds transactions.

*Input-Output table:* The Chinese National Accounts supplies the input-output table aggregated into 17 major economic sectors and which we aggregate further into five main sectors. The five sectors as discussed above are: *agriculture*, *industry* which includes

manufacturing and production and supply of electric power, steam and water; construction and mining and quarrying make up a separate category termed *other industries*; finally there are the “good” and “bad” services or *formal* and *other services*. The intermediate uses of output in the input-output table capture the sectoral input demands and are estimated at 2000 producer’s prices.

*Use of Output table:* Besides input demands each sector satisfies final consumption demands by households, which are divided into agriculture and non-agriculture households, government purchases, capital formation and changes in stocks, and export demands. Intermediate inputs together with final use of output and exports equal the total value of output being sold.

*Value-Added table:* The input-output table provides as well estimates for value-added or costs (other than those with intermediate inputs) associated with the production of output in each sector. These costs include depreciation of fixed capital, wages paid to labor, net taxes on production and operating surplus or profits. The sum of input and factor costs gives the total cost of production in each sector. The basic accounting principle on which the SAM is built (Taylor, 1979) requires that the cost of production must equal total sales of output for each sector.

*Flow of Funds table:* The flow of funds table describes main transfers among the five institutional sectors: the financial and non-financial enterprises, the government, the household sector and the rest of the world. The transactions included are those associated with compensation of employees, including employer’s contribution to social security, taxes on production and subsidies to production, income from properties such as interest, dividends and rents, current transfers which mostly cover transactions between the government sector and the rest of the economy related to taxes on income, payments to social security and allowances, and capital transfers that refer to payments from one sector to another, in this case from government to non-financial enterprises for the purpose of capital formation (National Accounts, China Statistical Yearbook 2003). Finally, the flow of funds table provides the amount of saving and gross fixed capital accumulation for each sector of the economy.

### 2.2.1 Informal and Formal Sectors in the Chinese Economy

Equations (7) below are the basic tools used to estimate the size of informal and formal activities for each economic sector. As mentioned above, two of the sectors, industry and formal service sectors are assumed to have no informal employment. It follows that when transactions are recorded for these two sectors there will be only two entries, the formal-formal and formal-informal transaction respectively. For the remaining three sectors each recorded transaction will be separated into four entries. The four entries for the transaction of intermediate inputs,  $X_{i,j}$ , purchased by sector  $j$  from sector  $i$  can be written mathematically the following way:

$$\text{Formal sector } i - \text{Formal sector } j: X_{i,j-FF} = X_{i,j} * \psi_{F,i} * \psi_{F,j}$$

$$\text{Formal sector } i - \text{Informal sector } j: X_{i,j-FI} = X_{i,j} * \psi_{F,i} * \psi_{I,j} \quad (7)$$

$$\text{Informal sector } i - \text{Formal sector } j: X_{i,j-IF} = X_{i,j} * \psi_{I,i} * \psi_{F,j}$$

$$\text{Informal sector } i - \text{Informal sector } j: X_{i,j-II} = X_{i,j} * \psi_{I,i} * \psi_{I,j}$$

A similar logic is behind the estimation of consumption levels by formal and informal household, with the only difference that we have to differentiate between agricultural and non-agricultural households. For the agricultural households we use the ratios of informal/formal employment wage bill in the agriculture sector alone (from table 4), whereas for non-agriculture households we calculate informal/formal employment wage ratios for all the remaining four sectors. For year 2000, the formal employment wage bill covered 86 per cent of total non-agricultural wage bill, with the left over 14 per cent of total wages being attributed to the informal sector.

For the remaining three components of the final demand, government consumption, GFCF and exports, certain assumptions are made and need to be fully accounted for at this stage. It is assumed that government and the rest of the world consume only goods and services produced by the formal sector. Gross fixed capital formation on the other hand is undertaken by both the formal and the informal sector. We further assume that the formal sector's investment

consists of formal capital goods only whereas the informal sector purchases capital goods from both the formal activities and from itself.

The costs of production related to compensation of factors of production appear in the first two columns of the SAM. To calculate the distribution of the value-added for the two sectors, the informal/formal wage ratios are applied to the compensation of laborers, costs associated with depreciation of fixed capital and operating surplus for each sector. Operating surplus, depreciation costs and wages are lumped together for the informal sector on the assumption that there is no clear differentiation between pure labor compensation and profits acquired following household operations. In contrast, profits and wages are two distinct entries for the formal sector.

The cells in the center of the SAM describe the flow of funds between different sectors of the economy. Official statistics (National Accounts, China Statistical Yearbook 2003) estimate that the overall household sector receives 312 billion Yuan as income from properties which includes interest, dividends, rent and other property income, 265.6 billion Yuan in social security payments and social allowances as current transfers from the government and 146.3 billion Yuan in *other transfers* assumed here to come from the business sector. Households pay 3.9 billion Yuan in interest to the financial sector and 338.2 billion Yuan in taxes on income and social security taxes to the government. The household sector also transfers about 21.9 billion Yuan to the rest of the economy, transaction assumed to take place through the business sector. Similarly, all income from properties is channeled through the business sector which combines the financial and non-financial enterprises. The distribution of these transactions between formal/informal households is calculated based on their shares of income which are different than the wage shares because operating profit is added to the income of informal sector. Calculated in this way the formal households capture 65 per cent of overall household income for year 2000. These shares are applied to all of the above items besides social security payments and taxes on income which are being collected only from registered of formal households.

The flow of funds table offers statistics also on income transfers, such as rent, dividends and interest, and current transfers – taxes on income, social security contributions and other transfers-- taking place between the business sector, government and the rest of the world. In

2000 government made net interest payments of 21.5 billion Yuan to the business sector. The rest of the world on the other hand received net income transfers, mostly dividend payments, amounting to 113.9 billion Yuan. The business sector had to pay 202.3 billion Yuan in income taxes however it received 455.8 billion Yuan as capital transfers from the government. Finally, the business sector received net current transfer of 52.2 billion Yuan from the rest of the world.

### **2.2.2 A SAM with Formal and Informal Sectors for China**

Table 5 presents the formal/informal sector SAM for China. The first quadrant in the NW corner is the input-output table and has been obtained using equations (7). Reading across the first row the formal or modern sector provides intermediate goods to itself worth of 3,246.8 billion Yuan as per column (A), and satisfies the informal or subsistence sector's demand for intermediates inputs of 1,104.7 billion Yuan (column B).

#### **Table 5**

In terms of final uses or uses of income, the formal households consume formal goods worth of 1,769 billion Yuan compared to 1,306.8 billion Yuan consumed by the informal households in column (E).

Capitalists, assumed to exist only in the modern sector, consume 482.7 billion Yuan in formal goods in column (D). This estimate is obtained as a residual between the sum of incomes received by the business sector across row (4) and the sector's saving and transfers to the rest of the economy.

Finally, the rest of the world contributes 2,319.8 billion Yuan to the final demand in column (G) while investment goods capture 3,010.8 billion Yuan of formal sector's output. Overall, the output produced by the formal sector is estimated at 24,416.1 billion Yuan. If calculated in terms of costs, formal sector's output consists of production costs associated with intermediate inputs (row (1) and (2)), wages paid to the labor -- amounting to 3,419.8 billion Yuan in row (3)-- profits including depreciation costs and which sums up to 2,593.5 billion Yuan in row (4) and imported inputs in row (6) worth 1,942.8 billion Yuan.

A similar interpretation of the SAM can be carried out for the informal sector. Overall the informal sector sells output valued at 3,555.9 billion Yuan. The costs of production in the informal output illustrated in column (B) are associated with costs with intermediate inputs in row (1) and (2) and labor compensation in row (5).

In addition to uses and costs of output, the SAM offers details on sources of income in rows (3) through (7) and uses of income in columns (C) through (G) for each sector separately. Across row (3) for example, besides wage income, formal households receive interest payments and transfers from the business sector in the amount of 282 billion Yuan and 249.4 billion Yuan in social security payments and other allowances from the government. Their total income comes up to 3,951.3 billion Yuan. In column (C) income of formal households is being spent on  $1,769+485.7=2,254.8$  billion Yuan of final consumption of formal and informal goods, 25.7 billion Yuan in interest payments to the business sector and 316.3 billion Yuan in income taxes and social security contributions. The difference between inflows of income and total outflows is saving by the formal household sector in the amount to 1,377.6 billion Yuan, or 35 per cent of the sector's total income. Details on sources and uses of income for the remaining institutional sectors can be read in a similar fashion. It is interesting to note that all domestic sectors have had positive savings. Savings by the external sector on the other hand are a negative 315.2 billion Yuan implying that China had a trade surplus during 2000.

As it is unavoidable in any SAM estimation, several adjustments were made to ensure accounting consistency. In particular, savings for all sectors besides the business sector were obtained as residuals. Compared to the actual data on savings for the government and household sectors provided by the flow of funds the difference with our calculation remains in the order of 3 to 7 percentage points.

### **3. A Social Accounting Matrix for India for 1998-99**

A SAM that incorporates economic activities of the informal sector alongside a formal or organized sector is constructed for India for the year 1998-99. Compared to China, the task of constructing the SAM for India is an easier one due to available statistics on the informal sector's

levels of production and factor incomes provided by India's *Central Statistics Organization (CSO)*. The methodology is similar to China's the only difference is that we use official statistics on the shares of factor incomes by organized and unorganized sectors as weights to calculate the size of the two sectors. The main statistical source for the economy-wide is the input-output table for 1998-99 provided by CSO.

### **3.1 Formal and Informal Sectors in the Indian Economy**

India's organized or formal sector consists of those enterprises which are registered as economic activities and fall under the regulations of legal provisions. The unorganized or informal sector includes enterprises which are not registered with the state and neither their activities nor official records are regulated by official rules. According to official statistics from *CSO* and *National Sample Survey Organization (NSSO)* during the 1990s the informal sector in India has employed about 93 per cent of labor force while it provided about 60 per cent of total output. Output and employment trends of formal and informal economic sectors are shown in tables 6 and 7 respectively<sup>8</sup>. There is no reversal in the formal/informal structure of employment despite the fact that in the recent period the organized sector has been expanding its share of GDP (Sinha and Adam, 2004, Bhattacharya and Sakthivel, 2005).

#### **Table 6**

Throughout the 1990s the contribution of the formal sector to the economy-wide output has increased by 6 percentage points, while the secondary and tertiary sectors have increased their share of GDP by almost 10 percentage points. However, most of the formal sector's gain in total output was the result of fast growth in two sub-sectors of the tertiary sector namely trade, hotels and transportation and other services. Within the secondary sector formal activities have lost ground to the informal ones, and in fact the industrial sector's share in total output remained constant over the period. These trends differ significantly from classical patterns of growth. Economic history shows that today's advanced economies have first undergone the process of industrialization and only after reaching a certain level of income per capita have they moved

towards expanding the service sector. For India, an economy with relatively low income per capita, the engine of growth seems to belong to the tertiary sector.

#### **Table 7**

Same patterns of structural change towards secondary and tertiary sectors, although at a much slower pace, show up in the shares of employment by sectors. During 1983-2000 the primary sector's share in overall employment has declined by 9 percentage points. The labor was relocated to both secondary and tertiary sectors, but overwhelmingly the new jobs in these sectors have been created by the informal activities.

### **3.2 A SAM for India with Formal and Informal Sectors**

The two-sector SAM for India for 1998-99 is presented in table 8. Compared to China where the formal or modern sector produces 80 per cent of overall output, in India the two sectors contribute almost equal shares to the economy-wide output.

#### **Table 8**

Across the first two rows the sectors trade intermediate inputs in columns (A) and (B), sell final output to the household sectors in columns (C) and (E), to capitalists in column (D), government in column (F) and to the rest of the world in column (G). Inter-industry transactions of intermediate goods for each economic sector are calculated using the same formula as for China (equations 7) and the shares of factor incomes from table 6 as weights. Adding up intermediate and final demand components across rows (1) and (2) gives total output sold by the formal and informal activities in the amount of 16,676 and 15,553 billion Rupees respectively.

Rows (3) through (7) capture the income generation or sources of income for each sector. Reading the SAM along columns, (A) and (B) describe costs of production, while columns (C) through (G) provide information on sectoral uses of income and patterns of demand. We discuss now sources and uses of income for each sector in detail.

The household sector is divided into formal and informal households based on their sources of income. Specifically, we call a household formal if the income earners in that household are engaged in formal activities as defined above. Besides wage income for the formal

households and wages and operating surplus for the informal households, the two households receive transfers from the government and interest on public debt, capital income from the business sector and transfers from the rest of the world. Following Pradhan et al (2006) capital income for the entire household sector is calculated as a residual between total personal income and wage income, interest on public debt, government transfers and transfers from the rest of the world. Interest on public debt is initially divided between the households and the business sector using estimates on the share of interest income going to the corporate sector from Pradhan et al. (2006) for 1997-98. Government transfers to the two households are distributed based on the actual size of the population in the two sectors. The other items, interest on public debt, capital income and transfers from the rest of the world, are divided using the shares of formal/informal household in total household income. Based on income data from CSO (Statement 76.1) formal household's share of income comes up to 28 per cent of total income of the household sector. This estimate is considerably higher than what others have provided (Sinha et al., 2000) as it takes into account not the actual numbers of workers in the formal and informal activities but the actual income of households.

The numbers for different sources of income can be read across row (3) for formal households and row (5) for informal households. Overall, the formal household sector receives 4,185.9 billion in income while the informal household sector gets 10,648 billion, which they spent on final goods consumption, pay taxes or save.

In terms of "uses of income" formal households spent 1,233.5 billion Rupees on formal goods and 2,015.6 billion Rupees on informal goods. In addition to final goods consumption, the formal households sector pays 100.3 billion Rupees in taxes to the government and saves 837.4 billion. Informal households consume as well goods from both sector, pay 252.1 billion in taxes and save a staggering 2,234 billion<sup>9</sup>.

Turning now to the business sector, it earns 2,484.5 billion in profits and receives 624.4 billion as transfers from the government. Out of a total income of 2,546 billion Rupees, the capitalists use 258 billion for final consumption. As for China, final consumption by capitalists is calculated as a residual between the business sector's income and the sum of the transfers to the

rest of the economy and savings, the latter from Statement 18 -- *Domestic Saving by Type of Institutions* -- in the National Accounts Statistics. The business sector transfers 157.2 billion in interest and/or dividend payments to the formal household sector and 395.2 billion to the informal household sector. Finally, the business sector pays 1,085.6 billion to the government. In this amount are included corporate taxes worth 245.2 billion and 840 billion in operating surplus that belong to public enterprises. The difference between the overall income and spending plus transfers, which appear in row (8), is gross saving by the sector in the amount of 650 billion Rupees.

In row (6), government income comes from taxes on production and costs with depreciation of fixed capital (1,348 billion), taxes on households and business sectors' income, as well as operating surplus from public-owned enterprises. Along column (F) this income is being used for 2,093 billion Rupees in final consumption, transfers to the two households and to the business sector as well as for interest payments on public debt. For 1998-99 government's spending exceeded its revenues by 530 billion Rupees as shown by negative saving in row (8).

Transactions with the rest of the world are captured by imports in row (7) in the amount of 2,247 billion, and 1,952 billion in exports in column (G). Statistics are available for net factor incomes from abroad which are distributed here among the two household sectors. For India the net factor incomes from abroad are consistently negative which as explained by Pradhan et. al. (2006) shows "the high repatriation of factor incomes to the rest of the world [which] may be expected from a capital-scarce country."

Last, the allocation of gross fixed capital formation among the two sectors is calculated using sectoral output shares. Most of the GFCF takes place in the secondary sector where formal sector retains the largest share of output. Final results in column (H) show that in 1998-99 the formal sector invested 2,142 billion Rupees in fixed capital compared to 1,493 billion Rupees invested by the informal sector.

#### **4. Conclusions**

Levels of employment, output and consumption estimates in the formal and informal sectors presented in this paper are meant to illustrate the duality of the Indian and Chinese economies. Table 9 presents some relevant summary statistics on main economic indicators for year 2000 for China and 1999-00 for India.

##### **Table 9**

There is a clear difference between the two countries when it comes to remunerations of workers in the formal sectors. The formal worker in India earned an annual average wage of 3,169 US dollars in 1999-00 compared to 1,367 US dollars earned by the Chinese regular employee during the same year. The situation is reversed in the informal sector. On average the Indian informal worker received 563 US dollars during 1999-00 while in China the informal worker earned about 848 US dollars in 2000. Nonetheless, income inequality between formal-informal sectors is observed in both countries, although significantly more pronounced in India. It is also worth noticing that while India has a considerably higher average wage in the formal sector its formal or organized sector employs a much smaller share of the labor force compared to China. As a result the economy-wide average wage in India is inferior to that of China's.

There are also important differences in both the magnitude and dynamism of the two economies. These differences show up most strikingly in terms of employment indicators. If in China formal employment has followed an upward trend as a share of overall employment rising from 36 per cent in 1990 to 42 per cent in 2000, in India the opposite story holds: an already minuscule share of formal sector employment in total labor force lost ground to informal activities from 8 per cent in 1983-84 to 7 per cent by 1990-2000.

One of the main reasons behind this difference is the existence of the centrally planned economic system in China with most of the economic activity organized around state-owned companies. TVEs and reforms to increase the presence of private, organized sector have also contributed to a significant degree to the formalization of the Chinese labor force. In India on the

other hand the state has considerably less presence and influence on the economic activity and reforms to formalize the labor force are still lacking.

When it comes to the question of how productive labor is, figures in table 9 show that the Indian worker in the formal sector is about twice as productive as the Chinese regular employee. The reverse is true for the informal sector where the average Chinese employee produces an annual output worth of 848 US dollars compared to 563 US dollars produced by the Indian informal worker. Once again, at the aggregate level, China is doing much better because of a much larger formal sector.

A last issue which we want to address here is the relation between our estimates of wage and employment levels and indicators on poverty. Although the informal sector remains the employer of last resort and offers jobs in activities characterized by lower productivity and income, it should not always be thought of as being entirely equivalent to living in poverty. A comparison of data on poverty head-count and poverty lines with indicators on wage levels and employment in the informal sector presented above should be sufficient to make the distinction between the two concepts. For China, Ravallion and Chen (2004) show that in rural areas 8.49 per cent of people were living under the poverty line of 850 Yuan per year – or about 100 US dollars – expressed in 2002 prices. In the urban areas there were only 0.63 per cent of the people categorized as poor. Deaton (2003) estimates that in 1999-00 in India there were 30.2 per cent of people in rural area living under the poverty line of 362 Rupees per month – or 8 US dollars – and 24.7 per cent of cities' population were declared as poor. As poor in both countries are expected to be found in the informal sector, we must acknowledge that the existence and expansion of the informal sector in China and India and in general in developing countries is a proof of increasing inequality and for some poverty, but also a way for survival. In many countries the informal sector acts as a sink for the labor force unable to find jobs in the organized sector. Policy makers are increasingly recognizing that the main challenge is to design policies that will put emphasis on the inter-sectoral linkages. For example labor supply provided by the informal sector could be an important resource for the organized sector. Development policies should foresee the direction of structural change of the economy and promote educational standards accordingly. Informal

sector also requires the means to develop and achieve higher rates of productivity growth. A facilitation of technological transfer from formal to informal sector is therefore necessary. A rise in productivity in predominantly informal rural sector in both China and India requires mechanization of means of production which can be made possible only if policies are implemented to facilitate the investment in new means of production.

## References:

Amin, T.M.N. (2002). 'The Informal Sector in Asia from the Decent Work Perspective', Working Paper on the Informal Economy No 4. International Labour Organization, Geneva.

Asian Development Bank, *Key Indicators 2005: Labor Markets in Asia: Promoting Full, Productive, and Decent Employment*, ADB: Manila.

Banister, Judith (2005a), "Manufacturing employment in China," *Monthly Labor Review*, July 2005, pp. 11–29.

Banister, Judith (2005b), "Manufacturing earnings and compensation in China," *Monthly Labor Review*, August 2005, pp. 22–40.

Bhattacharya B.B. and Sakthivel S. (2005), 'Economic Reforms and Jobless growth in India in the 1990s', In Ajit Kumar Sinha (ed.) *India Towards Economic Super Power: A Journey of Economic Reforms*. New Delhi, Deep and Deep, 2005.

Bureau of Labor statistics, (1997). U.S. Government, Bureau of Labor Statistics. "Chapter 12: Foreign labor statistics," in *BLS Handbook of Methods*. Washington, DC: U.S. Department of Labor.

Chen, Chih-jou Jay and Chang, Ying-Hwa (2007), 'Self-Employment in Eastern China and Taiwan', paper presented at the Conference on Rethinking the Rural-Urban Cleavages in Contemporary China, Fairbank Center, Harvard University.

Cooke, Fang Lee (2005), 'Employment relations in small commercial businesses in China', *Industrial Relations Journal* 36:1, 19–37.

Deaton, Angus (2003), 'Adjusted Indian Poverty Estimates for 1999-2000', *Economic and Political Weekly*, January 25, 2003.

Du, Yang, Gregory, Robert and Meng, Xin (2006), 'The impact of guest-worker system on poverty and the well-being of migrant workers in urban China', in Ross Garnaut and Ligang Song (eds.) *"The Turning Point in China's Economic Development"*, Asian Pacific Press: The Australian National University.

Fang, Cai (2004), 'The consistency of China statistics on employment: stylised facts and implications to public policies', CASS Institute of Population and Labour Economics Working Paper Series No. 39.

Fields, S. Gary (2005). 'A Guide to Multisector Labor Market Models', *Social Protection Discussion Paper 0505*, World Bank

Ghose, Ajit K. (2005), 'Employment in China: recent trends and future challenges', ILO: Geneva *Employment Strategy Papers* 2005/14

International Labour Organization (2004/5), *World Employment Report: Employment, Productivity and Poverty Reduction*, ILO: Geneva.

Pradhan, K. Basanta, Saluja, M.R. and Singh, K. Shalabh (2006), *Social Accounting Matrix for India*, Sage Publications, New Delhi.

Pyatt, Graham (1991), 'Fundamentals of social accounting', *Economic Systems Research*, Vol. 3, Issue 3: 315-341.

Ravallion, Martin and Shaohua Chen (2004), 'China's (Uneven) Progress Against Poverty' *World Bank Policy Research Working Paper* 3408, Development Research Group, World Bank, September 2004

Sakthivel, S. and Pinaki Joddar. 2006. 'Unorganised Sector Workforce in India: Trends, Patterns and Social Security Coverage' *Economic and Political Weekly*, Vol. 41, No. 21, May 27, 2006.

Sinha, Anushree and Christopher Adam (2004), 'Reforms and Informalization: What Lies Behind Jobless Growth in India' EGD and UNU-WIDER Conference, *Unlocking Human Potential: Linking the Informal and Formal Sectors* 17-18 September 2004, Helsinki, Finland

Sinha, Anushree, Siddiqui KA, Sangeeta, N. (2000), SAM Multiplier Analysis of Informal Households: Application to an Indian Archetype Economy, *Paper prepared for the Thirteenth International Input Output Conference, Macerata, Italy 21-25 August 2000*

Taylor, Lance, (2004), *Reconstructing Macroeconomics: Structuralist Proposals and Critiques of Mainstream*, Harvard University Press: Boston.

Zhang, J., Zhang, L., Rozelle, S., & Boucher, S. (2006). Self-employment with Chinese characteristics: The forgotten engine of rural China's growth," *Contemporary Economic Policy*, 24(3), 446-458.

### Tables and Figure

SAM for an economy with formal/informal sectors	Costs		Use of Income					Investment (H)	TOTALS
	Formal (A)	Informal (B)	Formal Households (C)	Business (D)	Informal households (E)	Government (F)	Exports (G)	(I)	
(1) Formal	Intermediate inputs	Intermediate inputs	Formal HH consumption of formal goods	Formal goods consumption	Informal HH consumption of formal goods	Public consumption	Foreign Demand	Capital accumulation of formal goods	Formal sector output
(2) Informal	Intermediate inputs	Intermediate inputs	Formal HH consumption of informal goods		Informal HH consumption of informal goods			Capital accumulation of informal goods	Informal sector output
(3) Labor(F)	Wages of formal HH			Dividends and interest income paid to formal HH		Government transfers and interest on public debt	Net transfers to formal HH from rest of the world		Formal HH income
(4) Business (F)	Profits		Interest payments by formal HH		Interest payments by informal HH	Interest on public debt and transfers			Business sector income
(5) Labor (I)		Wages and operating surplus of informal HH		Dividends and interest income paid to informal HH		Government transfers and interest on public debt	Net transfers to informal HH from rest of the world		Informal HH income
(6) Government	Taxes on production		Income tax by formal HH	Corporate income tax	Income tax by informal HH				Government income
(7) Imports	Imported inputs								Payments to the rest of the world
(8) Savings			Formal HH saving	Corporate sector saving	Informal HH saving	Public saving	Foreign saving	Total capital accumulation	0
(9) TOTALS	Formal sector output	Informal sector output	Use of formal HH income	Use of business income	Use of informal HH income	Aggregate government expenditure	Receipts from the rest of the world	0	

**Table 1: A Social Accounting Matrix for an economy with formal/informal sectors**

Employment	Urban employment (millions)		Urban Shares (%)		Rural Employment (millions)		Rural Shares (%)	
	Formal	Informal	Formal	Informal	Formal	Informal	Formal	Informal
1990	147.4	15.3	0.91	0.09	88.9	395.9	0.18	0.82
1991	152.7	13.7	0.92	0.08	91.5	397	0.19	0.81
1992	156.3	14.1	0.92	0.08	100.3	390.8	0.20	0.80
1993	159.5	22.6	0.88	0.12	113.0	373.0	0.23	0.77
1994	164.0	18.3	0.90	0.10	122.9	365.3	0.25	0.75
1995	169.6	17.0	0.91	0.09	131.2	359.2	0.27	0.73
1996	171.9	23.9	0.88	0.12	134.9	355.1	0.28	0.72
1997	173.6	30.5	0.85	0.15	140.3	350.4	0.29	0.71
1998	155.8	56.8	0.73	0.27	143.9	346.4	0.29	0.71
1999	152.3	68.2	0.69	0.31	146.2	343.8	0.30	0.70
2000	146.7	81.3	0.64	0.36	156.8	332.8	0.32	0.68
2001	144.5	91.4	0.61	0.39	162.1	328.9	0.33	0.67
2002	149.1	95.3	0.61	0.39	169.4	320.5	0.35	0.65

Table 2: Distribution of formal/informal employment by urban/rural areas.  
Source: Author's calculation based on Ghose (2005).

Employment Shares	Agriculture		Other Industry		Services		Overall Economy	
	Formal	Informal	Formal	Irregular	Formal	Irregular	Formal	Informal
1990	0.025	0.975	0.83	0.17	0.89	0.11	0.36	0.64
1991	0.025	0.975	0.85	0.15	0.90	0.10	0.37	0.63
1992	0.026	0.974	0.86	0.14	0.90	0.10	0.39	0.61
1993	0.026	0.974	0.83	0.17	0.87	0.13	0.41	0.59
1994	0.027	0.973	0.86	0.14	0.89	0.11	0.43	0.57
1995	0.030	0.970	0.86	0.14	0.90	0.10	0.44	0.56
1996	0.032	0.968	0.85	0.15	0.88	0.12	0.45	0.55
1997	0.032	0.968	0.83	0.17	0.87	0.13	0.45	0.55
1998	0.033	0.967	0.76	0.24	0.79	0.21	0.43	0.57
1999	0.033	0.967	0.74	0.26	0.76	0.24	0.42	0.58
2000	0.030	0.970	0.72	0.28	0.73	0.27	0.42	0.58
2001	0.027	0.973	0.70	0.30	0.71	0.29	0.42	0.58
2002	0.026	0.974	0.71	0.29	0.71	0.29	0.43	0.57

Table 3: Shares of informal and formal employment for the overall economy and for the three economic sectors that are assumed to employ informal workers in China  
Source: Author's calculations based on Ghose (2005).

Wage Shares	Agriculture		Other Industry		Services		Overall Economy	
	Formal	Informal	Formal	Informal	Formal	Informal	Formal	Informal
1990	0.04	0.96	0.88	0.12	0.93	0.07	0.56	0.44
1991	0.04	0.96	0.90	0.10	0.94	0.06	0.57	0.43
1992	0.04	0.96	0.90	0.10	0.95	0.05	0.59	0.41
1993	0.05	0.95	0.88	0.12	0.93	0.07	0.64	0.36
1994	0.05	0.95	0.90	0.10	0.94	0.06	0.66	0.34
1995	0.05	0.95	0.91	0.09	0.95	0.05	0.66	0.34
1996	0.05	0.95	0.90	0.10	0.93	0.07	0.65	0.35
1997	0.06	0.94	0.89	0.11	0.92	0.08	0.66	0.34
1998	0.06	0.94	0.83	0.17	0.87	0.13	0.66	0.34
1999	0.07	0.93	0.81	0.19	0.85	0.15	0.67	0.33
2000	0.06	0.94	0.79	0.21	0.83	0.17	0.68	0.32
2001	0.06	0.94	0.78	0.22	0.82	0.18	0.68	0.32
2002	0.06	0.94	0.79	0.21	0.82	0.18	0.71	0.29

Table 4: Share of wage bill of regular/irregular economic activities in China.

Source: Author's calculations based on data on employment from Ghose (2005) and data on wage levels from China Statistical Yearbook (various years).

SAM for China 2000 (10,000 Yuan)	Costs		Use of Income					Investment (H)	TOTALS
	Formal (A)	Informal (B)	Formal HH (C)	Business (D)	Informal HH (E)	Government (F)	Exports (G)		(I)
(1) Formal	324,688,253	110,479,959	176,905,695	48,277,862	130,685,019	117,052,600	231,989,484	301,081,209	2,441,160,081
(2) Informal	173,829,960	43,060,895	48,574,385		67,457,513			22,676,794	355,599,546
(3) Labor(F)	341,984,815			28,207,816		24,945,975			395,138,606
(4) Business (F)	259,353,062		257,396		141,504	4,544,700	15,601,500		275,353,462
(5) Labor (I)		202,058,693		15,507,284		810,925			218,376,901
(6) Government	147,016,800		31,631,900	22,629,100					201,277,800
(7) Imports	194,287,191			21,776,100					216,063,291
(8) Savings			137,769,230	143,500,000	20,092,866	53,923,600	(31,527,693)	(323,758,003)	0
(9) TOTALS	2,441,160,081	355,599,546	395,138,606	275,353,462	218,376,901	201,277,800	216,063,291		

Table 5: 2000 Social Accounting Matrix for China after adjustments such that accounting consistency applies (10,000 Yuan)

<b>Output (shares)</b>	<b>1993-94</b>	<b>1998-99</b>	<b>2002-03</b>
<i>Primary</i>	<i>0.33</i>	<i>0.29</i>	<i>0.24</i>
Organised	0.04	0.03	0.04
Unorganised	0.96	0.97	0.96
<i>Secondary</i>	<i>0.24</i>	<i>0.24</i>	<i>0.24</i>
Organised	0.64	0.61	0.61
Unorganised	0.36	0.39	0.39
<i>Trade, Hotel transport</i>	<i>0.19</i>	<i>0.21</i>	<i>0.23</i>
Organised	0.24	0.27	0.29
Unorganised	0.76	0.73	0.71
<i>Other Services</i>	<i>0.24</i>	<i>0.26</i>	<i>0.29</i>
Organised	0.66	0.72	0.72
Unorganised	0.34	0.28	0.28
<i>All sectors</i>			
Organised	0.37	0.40	0.43
Unorganised	0.63	0.60	0.57

Table 6: Shares of organized and unorganized sector in Net Domestic Product in India  
Based on Statement 76.1: Factor Incomes by Kind of Economic Activity  
Source: National Accounts Statistics, CSO.

<b>Employment (shares)</b>	<b>1983-84</b>	<b>1987-88</b>	<b>1993-94</b>	<b>1999-2000</b>
<i>Primary</i>	<i>0.69</i>	<i>0.65</i>	<i>0.64</i>	<i>0.60</i>
Organised	0.01	0.01	0.01	0.01
Unorganised	0.99	0.99	0.99	0.99
<i>Secondary</i>	<i>0.14</i>	<i>0.16</i>	<i>0.15</i>	<i>0.16</i>
Organised	0.23	0.18	0.17	0.15
Unorganised	0.78	0.82	0.83	0.85
<i>Trade, Hotel transport</i>	<i>0.09</i>	<i>0.10</i>	<i>0.10</i>	<i>0.14</i>
Organised	0.13	0.11	0.09	0.07
Unorganised	0.87	0.89	0.91	0.93
<i>Other Services</i>	<i>0.08</i>	<i>0.09</i>	<i>0.11</i>	<i>0.10</i>
Organised	0.40	0.37	0.32	0.35
Unorganised	0.60	0.63	0.68	0.65
<i>All sectors</i>				
Organised	0.081	0.078	0.073	0.070
Unorganised	0.920	0.922	0.927	0.930

Table 7: Shares of organized and unorganized sector employment in India  
Source: Adapted from Sakthivel and Joddar (2006) based on data for organized sector from annual reports (1983 and 1988) and Quarterly Employment Review (1994 and 2000), National Sample Survey and Directorate of General Employment and Training. Data for unorganized sector is derived as a residual (see Sakthivel and Joddar (2006)).

SAM for India 1998-99 10 mill. Rupees	Costs		Use of Income					Investment (H)	TOTALS (I)
	Formal (A)	Informal (B)	Formal HH (C)	Business (D)	Informal HH (E)	Government (F)	Exports (G)		
(1) Formal	311,780	280,529	123,351	25,849	309,958	209,337	195,280	214,243	1,670,328
(2) Informal	366,875	373,284	201,458		506,223			149,326	1,597,165
(3) Labor(F)	383,618			15,728		23,508	(4,261)		418,593
(4) Business (F)	248,451					6,244			254,695
(5) Labor (I)		943,352		39,522		92,637	(10,707)		1,064,805
(6) Government	134,879		10,036	108,569	25,218				278,702
(7) Imports	224,725								224,725
(8) Savings			83,748	65,026	223,406	(53,024)	44,413	(363,569)	0
(9) TOTALS	1,670,328	1,597,165	418,593	254,695	1,064,805	278,702	224,725	-	

Table 8: 1998-99 Social Accounting Matrix for India after adjustments such that accounting consistency applies.

India 1999-00	Formal	Informal
Employment (millions)	27.8	370
Net Domestic Product (millions US dollars)	143,315	208,137
Productivity	5,155	563
Wages	3,169	563
China 2000	Formal	Informal
Employment (millions)	303.5	414.1
Output (millions US dollars)	729,606	351,122
Productivity (US dollars)	2,404	848
Wages	1,367	848

Table 9: Summary statistics for India and China

**Appendix:**

wages	TVEs	Agriculture			Manufacturing			Other Industries			Services		
		State-owned	Collective-owned	Emerging formal-private	State-owned	Collective-owned	Emerging formal-private	State-owned	Collective-owned	Emerging formal-private	State-owned	Collective-owned	Emerging formal-private
1990	1,217	1,559	1,238	3,778	2,289	1,622	3,055	2,724	1,916	-	2,231	1,619	2,987
1991	1,358	1,665	1,366	3,760	2,505	1,798	3,626	2,958	2,160	4,424	2,407	1,786	4,039
1992	1,644	1,845	1,487	4,069	2,889	2,017	4,154	3,309	2,442	4,787	2,854	1,968	4,651
1993	2,021	2,043	1,887	3,905	3,562	2,469	4,874	4,000	3,048	4,316	3,537	2,444	5,460
1994	2,485	2,821	2,510	5,394	4,508	3,076	6,096	5,139	3,754	5,511	5,074	3,240	7,406
1995	3,419	3,527	2,927	6,992	5,352	3,717	7,245	6,183	4,525	6,539	5,796	3,923	8,478
1996	3,912	4,038	3,814	7,389	5,798	4,007	7,945	6,829	4,925	6,708	6,549	4,356	9,752
1997	4,476	4,304	3,945	7,061	6,008	4,120	8,367	7,218	5,264	7,160	7,162	4,605	10,679
1998	4,987	4,522	4,358	5,685	6,981	5,016	8,556	7,786	5,754	8,126	8,106	5,423	10,766
1999	5,193	4,813	4,878	6,740	7,611	5,327	9,316	8,165	6,066	8,691	9,176	6,023	11,985
2000	5,508	5,132	5,536	8,519	8,554	5,722	10,192	8,841	6,635	10,134	10,263	6,511	13,861
2001	5,909	5,702	5,654	8,473	9,590	6,088	11,074	9,834	7,068	11,184	12,168	7,361	15,750
2002	6,418	6,326	6,415	9,553	10,876	6,749	12,027	10,894	7,542	11,968	14,021	8,401	17,239

**Table A.1: Average annual wages by sectors for formal enterprises (current Yuan).**

Source: *China Statistical Yearbooks*, National Bureau of Statistics for wages in state-owned, collective-owned and emerging private formal enterprises. *China TVE Statistical Yearbook*, Ministry of Agriculture for wage levels in TVEs.

Note: We extrapolate the TVEs' wage level for 1993-1994 and 1996 using the growth rate of average wage in urban-collective enterprises which up to 1998 has had the same dynamics as the average wage in the TVEs'.

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<sup>1</sup> Developing member countries of the Asian Development Bank

<sup>2</sup> Where Asia's labor force of 1.7 billion accounts for about 57.3% of the world's total labor force (ADB 2005)

<sup>3</sup> The two categories account for a broad definition of underemployment. ILO 2005

<sup>4</sup> We take the quotation by Fields (2004) from the ADB (2005) report.

<sup>5</sup> Unfortunately, data does not allow us to extract those jobs in telecommunications services from the employment category of transport, storage, post & telecommunications services.

<sup>6</sup> I would like to thank Hongqin Chang who provided me with printouts from these reports, and to Minqi Li who helped me with the translation from Chinese into English.

<sup>7</sup> One reason for this higher than expected wage for informal workers may be associated with the fact that a large majority of informal urban workers are migrant rural workers who usually come to the cities looking for work but leave their families behind. Therefore, multiplying income per capita by the average number of dependents may overestimate the average income earned for those in the lowest income bracket.

<sup>8</sup> Sectoral contribution to output is calculated based on data on factor incomes -- compensation of employees, mixed income and operating profits -- provided by the CSO.

<sup>9</sup> India's Ministry of Labour estimates that household sector contributes about three quarters of overall gross domestic saving and most of these savings come from the unorganized sector.