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**Structural change and employment: an empirical exploration**

**by**

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# **Structural change and employment: an empirical exploration**

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Abstract: This paper is an empirical exploration into the nature of structural change in output and its relationship with employment in a handful of developing countries over the last two decades. It also explores the relationship of these changes in output and employment structures with change in labour use patterns across gender. Finally it seeks to relate changes in employment patterns and labour use across gender with extant levels of poverty. It argues that a key link between growth and poverty reduction is 'relative surplusness' of labour, particularly in agriculture. Countries where output growth has not resulted in significant declines in relative surplusness of labour have also seen much slower declines in poverty levels. It therefore suggests that maybe we need to take another look at the assumption that productivity driven per capita income growth will automatically take care of issues of 'relative surplusness' of labour. In terms of employment outcomes, both females and males have had to deal with adjusting to and living with increasing relative surplusness of labour. In some contexts, there has been some mobility as well for females in the employed workforce. But what seems unchanging, both across time and space, is that males seem consistently over-represented in sectors with the highest output per unit labour.

(Keywords: structural change, productivity, surplus labour, relative surplusness, employment, output, growth, participation ratios, male, female, poverty, mobility, output per unit labour)

## **Structural change and employment: an empirical exploration**

This paper is an empirical exploration into the nature of structural change in output and its relationship with employment in a handful of developing countries over the last two decades. It also explores the relationship (or the lack thereof) of these changes in output and employment structures with change in labour use patterns across gender. Finally it seeks to relate changes in employment patterns and labour use across gender with extant levels of poverty.

Countries have been chosen to reflect the diversity of growth experience as well as income levels. Therefore Thailand, Malaysia and Chile have been chosen as middle income countries that have witnessed sustained per capita income growth; Indonesia and India as countries with reasonable, though not outstanding, per capita income growth records. Philippines and Bangladesh as lower middle and low income countries respectively, with poor growth records. And Mexico and Brazil as upper middle income countries with a poor per capita income growth record, particularly in the last couple of decades.

The time period of the last two decades or so was largely dictated by the availability of labour force and employment data. For most developing countries, labour force and employment data is consistently available mostly from the early 1980s and the need for a uniform comparable time period meant that we restricted the analysis to the last two decades.

The paper is divided into four broad sub-sections: Section I is a brief introduction that largely discusses issues related to method. Section II explores six countries in the Asia – two each in high per capita income growth, medium per capita income growth and low per capita income growth. Section III analyses three countries in Latin America – one high and two low per capita income growth economies. Section IV concludes by trying to draw together lessons that can be gleaned from these country experiences.

## **I: Introduction**

One of the more robust stylisations of about per capita income growth is that increase in per capita incomes is associated with structural change in output. Output structure changes from agriculture to non-agriculture to begin with and followed by change within non-agriculture as services begin to dominate output. And as Kuznets (1973) has noted, rapid structural transformation is one of elements that constitute “modern economic growth”. Change in output structure is normally followed, with a lag, by a change in labour use patterns, or employment structure.

Indeed shift of labour from agriculture (low-productivity) to non-agricultural (higher-productivity) sectors is one of the more important drivers of productivity growth. A sustained mis-match, on the other hand, between output and employment structures can hold back productivity growth, if low productivity sectors account for too much of employment. Or, the flip side of that, high productivity sectors account for too little.

Therefore re-allocation of labour to higher productivity sectors is an important contributor to productivity growth. But as the World Economic and Social Survey (WESS) 2006 notes “Inversely, slow economic growth will lead to increasing underutilization of resources and hence to adverse effects on productivity. In this sense, the association that is usually established between slow productivity performance and slow economic growth may have its basis not in a lack of technological change, but rather in the growing underutilisation of resources that characterizes a low-growth environment ...” (page 31). We would like to take forward this discussion of underutilisation of labour resources as a consequence of structural change and suggest that it characterises not just low-growth environments but high-growth environments in developing economies as well.

‘Too much’ or ‘too little’ of labour is of course rather vague. So we attempt to make both a little more concrete by defining a measure for ‘relative surplusness’ and ‘relative scarceness’ in labour use. Given that at low per capita incomes, agriculture accounts for the bulk of the output and most of employment, the ratio output share/employment share (what we have called the R-O/E ratio) of agriculture would be less than 1, suggesting that

it is characterised by relatively surplus labour. For non-agriculture by the same token it would be greater than 1.

If over time the ratio for agriculture is declining, then it suggests that it is unable to shed labour at the same rate that it sheds output share, and therefore levels of relatively surplus in labour in agriculture continues to increase despite growth and structural change. Similarly a disaggregation of the non-agricultural ratio will allow us to judge at what pace labour is being absorbed by industry and services. As an economy undergoes structural change and the non-agricultural sector begins to account for the bulk of employment, it is possible that sectors other than agriculture might also suffer from 'relative surplusness' of labour.

The way the R-O/E ratio has been defined, it gives us no sense of whether the movement is happening over a low or a high growth phase of the economy. Therefore to the extent possible we will attempt to delineate the movement of this ratio over low and high growth phases and explore whether these alter patterns of labour use.

Another reasonably robust stylisation is that in the early phase of economic growth, i.e., from low to medium per-capita-income status, an increase in per capita incomes is associated with an increase in workforce participation ratios (PR), i.e. rate of growth of the labour force (LF) is greater than rate of growth of population.

Given the gendered division of labour as between inside and outside the house, female participation in remunerated labour tends to be significantly lower than that of males. Other things being equal, therefore, an increase in PR should be associated with a much sharper increase in female PR (FPR) than that of male PR (MPR), starting albeit from a much lower base from the former.

If full employment were to obtain, then it also follows that the ratio of female employment (FEMP) to male employment (MEMP) must increase. But of course full employment does not always obtain and in periods of low employment growth, or of insufficient employment growth relative to labour force growth, if women are the first ones to leave the workforce or lose their jobs, then FEMP/MEMP ratio could well decline. On the other hand, even if full employment were to obtain, in phases of low employment growth and nominal wage stagnation, increased female participation in the workforce and employment, in other words a rising FEMP/MEMP ratio, could well be a sign of distress employment. Or further still, if there is a gendered division of occupation, then a rise in the FEMP/MEMP ratio could reflect the fact of new drivers of output and employment growth, e.g. a switch from industry to services, are in sectors where females are over-represented in employment. We will therefore explore how this ratio behaves in response to changes in growth rates as well as structural change in employment patterns. Finally we will also try and explore whether distinct labour use patterns between females and males have any bearing on poverty outcomes.

This paper brings together these two stylisations, i.e., structural change in output and employment on the one hand and changes in participation ratios of women and

FEMP/MEMP ratios and on the other, and attempts to explore how changing patterns of labour use and absorption of women into the workforce might have some bearing on productivity and poverty outcomes.

The paper therefore hopes to contribute to the literature on structural change in two ways: first, by focussing on the underutilisation of labour resources in both high and low growth economies, it hopes to add to narrative of structural change as laid out in chapter two of WESS 2006. Second, by bringing together a discussion of how structural change affects female and male employment it hopes to elucidate how gender and structural change interact in high and low growth environments.

## II. Asia

### IIA. High per capita income growth economies

#### Malaysia

Malaysia is an upper-middle income country with a per capita income in 2006 of \$5,700. It is also one of the few developing economies that have seen sustained per capita income growth over the last 4 decades or so (See Ghosh 2008).

	1986-96	1996-2006
GDP	9.2	4.2
GDP per capita	6.4	2

Source: World Bank: Malaysia at a Glance

	1987-96	1996-2000
Total employment	4.5	2.2
Female employment	4.5	2
Male employment	4.5	2.3

Source: Calculations on the basis of data from ILO's Laborsta database  
 Note: 2000 was the last year for which employment data was available for Malaysia on Laborsta

As Table 1 and 2 suggest, in the decade of 1986-96, Malaysia performed very well both in output and employment terms, with the former growing at 9.2% and the latter at 4.5% (over 1987-96). Over the decade that followed, 1996-2006, both output and employment growth decelerated sharply, declining by more than 50% in each case – output grew at 4.2% and employment at 2.2% (over 1996-2000). It is worth noting however that even as the economy decelerated, employment elasticities did not change very much. If anything there was a marginal increase, going from 0.49 to 0.52 between 1987-96 and 1996-2000.

	\$1	\$2
1984	2	15

1987	1	15
1989	1	14
1992	0	14
1995	1	13
1997	0	9
Source: World Bank, Povcal Net		

Sustained growth has meant that abject poverty has been wiped out though using somewhat broader definition (\$2) poverty still persists albeit at relatively low levels. Of course this data goes only up to 1997 and in all likelihood poverty ratios have increased somewhat after 1997, particularly given the fact of the growth slowdown in the subsequent decade.

#### Structural change in output and employment

Sustained growth has meant significant structural change in both output and employment.

	1986	1996	2006
Agriculture	19.8	11.7	8.7
Industry	38.5	43.5	49.9
of which Manufacturing	19.3	27.8	29.8
Services	41.7	44.8	41.3
Source: World Bank: Malaysia at a Glance			

An important feature of structural change in output terms over this period (1986-2006) is the behaviour of the share of services. Between 1986 and 1996 the share of services increases by a little over 3% whereas in the subsequent period (1996-2006) it declines by 3.5%. As a result, the share of services in 2006 is marginally lower than in 1986. Therefore the period 1986-96 and 1996-2006 present distinct patterns of structural change in output terms. What makes the difference in pattern interesting is that the former period is a high growth and the latter low growth, in terms of per capita incomes.

In the high growth phase, 1986-96, agriculture's share in output declines by 8.1%. This decline in agriculture is shared out between industry and services, which see their respective shares increase by 5 and 3.1% respectively. Perhaps what is most noteworthy of this period is that within industry, the share of manufacturing increases by a whopping 8.5%. Given that the economy grew at an average rate of more than 9% over this period, it would not be incorrect to infer that output growth over this period was manufacturing driven, followed by services in the order of importance.

In the low growth phase, 1996-2006, the shares of both agriculture and services decline by 3 and 3.5% respectively. The share of industry rises by 6.4% but that of manufacturing increases by only 2%. Therefore whereas in even in the low growth phase, output growth is broadly industry driven, both manufacturing and services see a significant deceleration in growth relative to the earlier period. The slowdown in services though is much greater than that in manufacturing.

	1980	1987	1996	2000
Agriculture	37.2	30.9	19.4	18.4
Industry	24.1	22.3	32.2	32.2
Services	38.7	46.8	48.4	49.5

Source: Calculations on the basis of data from ILO's Laborsta database  
Note: 1980 is based on census data and the subsequent years on sample survey data.

As Table 5 suggests, that the largest decline in agriculture's share in employment took place in the high growth phase<sup>1</sup> – a decline of 11.5%. The other important aspect about structural change in employment in this period is that the bulk of the decline agriculture was absorbed by industry which saw its share in employment increase by almost 10%. The rest went to services which saw its share increase by almost 2%.

Structural change in employment in the high growth phase then is different from both the preceding and succeeding phases. In the preceding period, 1980-87, shares of both agriculture and industry decline and are absorbed by services. In the succeeding phase, the low growth phase, the pace of structural change slows down considerably and the small decline in the share of agriculture is almost entirely absorbed by services.

	1980	1987	1996	2000
Agriculture	0.61	0.64	0.59	0.46
Industry	1.70	1.71	1.31	1.51
Services	0.94	0.90	0.96	0.87

Source: Calculations on the basis of data from ILO's Laborsta and the UN SNA database.  
Note: 1980 is based on census data and the subsequent years on sample survey data.

As we have already noted from Table 5, during the high growth phase there was a substantial reduction in agriculture's share in employment and that this benefited largely industry but also services. As a result of the greater absorption of labour by industry, its R-O/E falls from 1.71 to 1.31 between 1987 and 1996, suggesting that the relative scarceness of labour in industry actually declines. For services on the other hand the ratio increases 0.9 to 0.96 suggesting that output and employment shares were roughly in balance in 1996. If the R-O/E ratios moved in the right direction in industry and services, in agriculture it deteriorated slightly, from 0.64 to 0.59, suggesting that despite the decline in the share of employment in agriculture, relative to the decline in agriculture's output share it did not fall fast enough, and as a result the 'relative surplusness' of labour in agriculture worsened marginally.

In the low growth phase on the other hand, most of these trends get reversed. First as we know from Table 5 sectoral shares of employment in the low growth phase do not change very much. Equally importantly, the small decline in agriculture goes almost entirely in

<sup>1</sup> The simple average rate of growth of GDP (in US dollar terms) for the period 1980-87 was 5.3%. The simple average growth rate of agricultural output was 4.2, 1.6 and 2.9% respectively for the periods 1980-87, 1987-96 and 1996-2006.

the favour of services. As a result, there is a fairly sharp deterioration in all sectoral R-O/E ratios. Agriculture declined to 0.46 and services to 0.87, suggesting that employment growth happened in ways that worsened the relative ‘surplusness’ of labour in both sectors. It is also worth noting that both these ratios stood at levels that are much lower than compared with 1980, suggesting a worsening of overall employment performance in the economy in terms of absorption of ‘surplus’ labour. Industry’s performance in this regard worsened as well, with its ratio increasing from 1.31 to 1.51 between 1996 to 2000, suggesting a worsening of the relatively scarceness of labour in that sector.

However, unlike agriculture and services, the gains made by industry in the high growth phase were not entirely wiped out, with the ratio significantly lower in 2000, as compared with both 1980 and 1987. In sum, in the low growth phase, not only does employment growth decelerate but this happens in a fashion that exacerbates relative sectoral ‘surplusness’ and ‘scarceness’ of labour in the economy. That this need not necessarily be so is demonstrated by agriculture between 1980 and 1987, where despite being a low growth phase, its R-O/E actually improves.

We can add another bit of information about sectoral output per unit labour that should help flesh out the story of the movement in relative ‘surplusness’ and ‘scarceness’ of labour alongside sectoral growth patterns.

	1980	1987	1996	2000
Total	16635	13942	29742	17703
Agriculture	10112	8914	17405	8107
Industry	28314	23819	38943	26650
Services	15631	12558	28549	15446

Source: Calculations on the basis of data from ILO’s Laborsta and the UN SNA database.  
 Note: 1980 is based on census data and the subsequent years on sample survey data.

We have already noted that in the high growth phase, 1987-96, the sharp decline in the share of agriculture is absorbed largely by industry and the share of services increased by a relatively small proportion. In the low growth phase however, the share of industry in employment did not change and the small decline in the share of agriculture was absorbed by services.

Table 7 establishes that industry has the highest output per unit labour in the Malaysian economy, followed by services and then by agriculture. Therefore the transfer of labour from agriculture largely to industry during the high growth phase meant that labour transferred from the least to the most productive sector of the economy. In the low growth phase however sectoral transfer of labour from agriculture to services constrained per capita income growth, given that output per unit labour in services is significantly lower than that of industry.

During the high growth phase, per capita income growth was also aided by the fact that growth in output per unit labour was faster in agriculture and services than in industry. As

a result agriculture's output per unit labour as a proportion of industry's rose from 0.37 in 1987 to 0.45 in 1996. Similarly the same ratio for services increased from 0.53 to 0.73. In the low growth phase however the ratio for both agriculture and services declined quite sharply – for agriculture from 0.45 to 0.30 and for services from 0.73 to 0.58 – suggesting a relatively much sharper contraction of output per unit labour in both sectors.

To sum, the high growth phase in Malaysia saw fairly significant change in both output and employment structures. Output change was dominated by industry and followed by services at the expense of agriculture. This was true of employment change as well. Therefore growth resulted in a sectoral transfer of labour from the lowest to the highest output per unit labour, boosting per capita income growth. Equally importantly, per capita income was also boosted because output per unit labour grew faster in agriculture and services than in industry. In addition relative rates of labour absorption meant that both the 'scarceness' of labour in industry and the 'surplusness' of labour in services declined. The latter would have again boosted productivity growth.

In the low growth phase however, change in output and employment shares moved in different directions. Output change was dominated by industry and both agriculture and services saw a decline in output shares. In employment change on the other hand, the bulk of the sectoral transfer of labour from agriculture was absorbed by services, where output per unit labour is significantly lower than that in industry. Sectoral transfer of labour then constrained per capita income growth in the low growth phase. In addition the 'the 'surplusness' of labour in both agriculture and services worsened, as did the 'scarceness' of labour in industry. Therefore some of the good work done in the high growth phase gets reversed. The increasing 'surplusness' of labour in the services sector is particularly worrying given that the service sector has emerged as the largest employer in the economy.

### Gender and labour use patterns

It might be instructive to see if a gender disaggregation of employment patterns provides any nuance to this story of labour absorption and sectoral change.

Table 8: Malaysia: Labour force growth rates		
	1987-96	1996-2000
Overall Labour Force (LF)	3.9	4.0
Female LF	3.6	4.4
Male LF	3.9	3.7
Source: Calculations on the basis of data from ILO's Laborsta database		

The first thing to note about Table 8 is that female and male labour forces have asymmetric growth patterns as between high and low growth phases. In the high growth phase the male labour force (MLF) expands faster than female. In the low growth phase however it is female labour force (FLF) that expands appreciably faster. It will be recalled from Table 2 above that female and male employment grew at the same rate of 4.5%, i.e. slightly higher than labour force growth. In the low growth phase however when there was substantial deceleration in employment growth, female employment grew

slower than male, at 2 and 2.3% respectively. Therefore even as the female employment rate of declines during the low growth phase, female labour force growth actually increases and grows faster than male. In the high growth phase, on the other hand, where employment across gender grows faster than both female and male labour force, female labour force grows slower than male.

Given the above, Malaysia exhibits a couple of noteworthy trends in the evolution of its workforce. First, WPRs across gender actually declines quite sharply between 1987 and 1988 and the decline is much sharper for males (9.6%) than for females (5%). Second, given that the MLF grows faster than FLF during the high growth phase and the low base of FLF, MPR actually increases much faster than FPR during the high growth phase. Third, in the low growth phase, with slowing down of MLF growth and increase in FLF growth, the increase in FPR and MPR is roughly similar. Somewhat counter-intuitively then, PRs across decline during the high growth phase and even when they begin to increase, the increase for women is much lower than that for men. Finally, in the low growth phase, FLF growth increases faster than in the high growth phase (and the MLF) even as female employment declines and grows slower than male employment.

Table 9: Malaysia: Labour force (15+) Participation Ratios			
	PR	PR Female (FPR)	PR Male (MPR)
1987	43.8	31	56.5
1988	36.5	26	46.9
1990	37.6	27	48.2
1997	39.6	28	51.1
1998	40.1	28	52
1999	40.3	28	52.1
2000	41.3	29	52.7

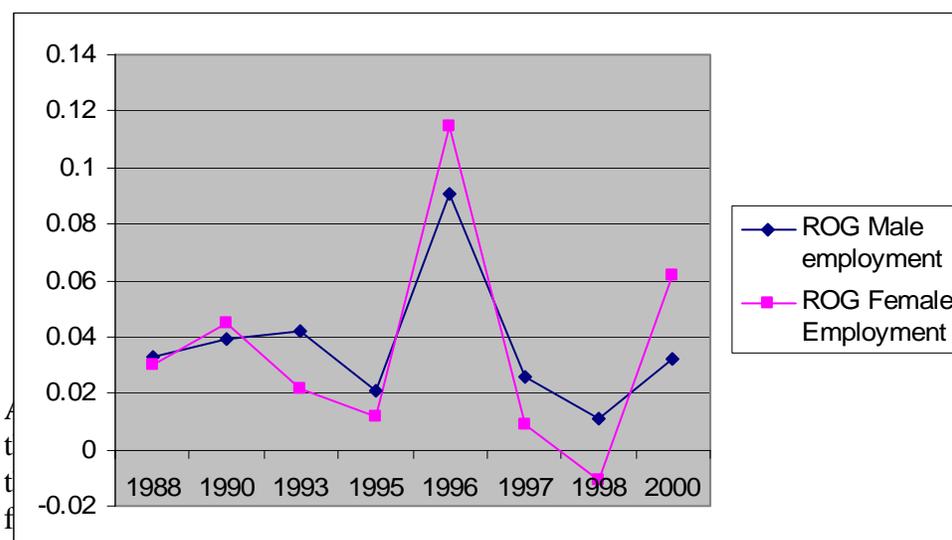
One consequence of the fact that LF growth rates continue to rise as employment growth decelerates during the low growth phase is an increase in open unemployment, as evidenced by the decline in the employed/LF ratio.

Table 10: Malaysia: Employment Levels	
	Employed/LF
1987	1.000
1988	1.000
1990	1.000
1997	1.000
1998	0.968
2000	0.969

We had earlier noted that in the high growth phase female and male employment grew at similar rates of 4.5% each (see Table 2). As Table 11 makes clear however the period average disguises the fact that for most of the high growth period male employment actually grows significantly faster than female employment (see column 4 in Table 11).

Table 11: Malaysia: Average rates of employment growth (%)
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	Female employment growth (1)	Male employment growth (2)	Total employment growth	(2)/(1)
1987-1988	3.0	3.3	3.2	1.10
1988-1990	4.5	3.9	4.1	0.88
1990-1993	2.2	4.2	3.5	1.93
1993-1995	1.2	2.1	1.8	1.79
1995-1996	11.5	9.1	9.9	0.79
1996-1997	0.9	2.6	2.0	2.83
1997-1998	-1.1	1.1	0.4	-1.02
1998-2000	6.2	3.2	4.2	0.52



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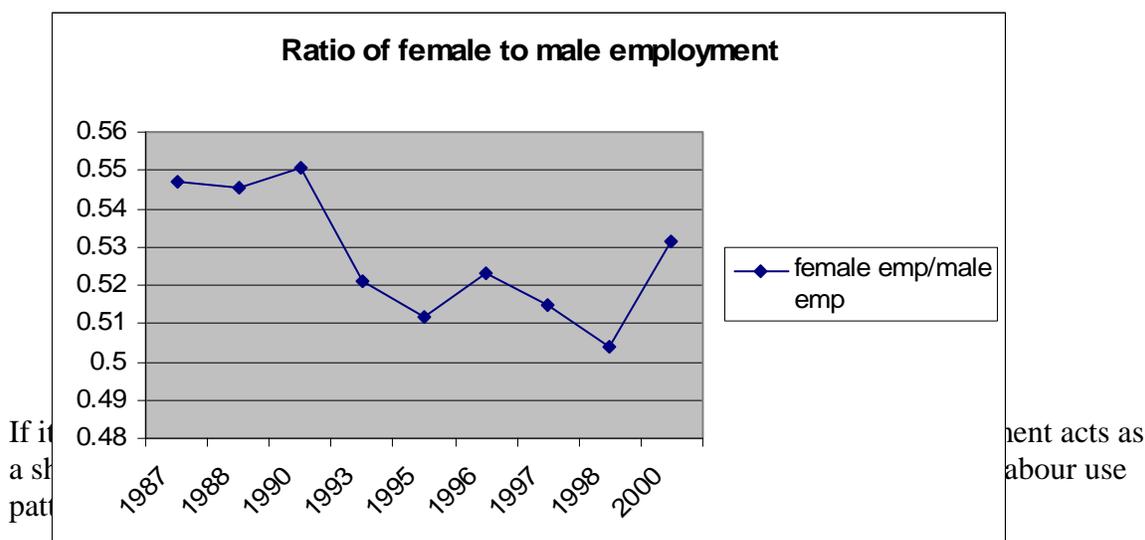
As a result female employment growth has much greater variance and standard deviation (0.0015 and 0.039 respectively) than its male counterpart (0.0006 and 0.024 respectively).

	FEMP/MEMP
1987	0.547
1988	0.545
1990	0.551
1993	0.521
1995	0.512
1996	0.523
1997	0.515
1998	0.504
2000	0.532

As a result of the above – slowly rising FPR during the high growth phase and the rate of growth male employment being largely higher than female during that phase – the ratio of female to male employment actually declines for most of the high growth phase and continues into the low growth phase as well, declining up to 1998 after which it

increases. But it is worth noting that even after that increase the ratio is lower than what it was in 1987.

Malaysia then provides an interesting example of an economy where over the period when the economy sees very high rates of growth of output and employment, increase in FPR is very small and the FEMP/MEMP ratio declines despite maintaining close to full employment (see Table 10). Taking this along side the fact that growth female employment declines much more than male employment when employment growth decelerates, the female labour force and female employment emerge as shock absorbers to labour market movements, providing the slack that bears the brunt of adjustment.



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	1980	1987	1996	2000
Agriculture	43.8	30.8	17.0	14.0
Industry	20.0	21.2	29.6	28.9
Services	36.3	48.0	53.4	57.1

Source: Calculations on the basis of data from ILO's Laborsta database  
Note: 1980 is based on census data and the subsequent years on sample survey data.

	1980	1987	1996	2000
Agriculture	33.9	30.9	20.6	20.7
Industry	25.6	22.9	33.6	33.9
Services	39.9	46.2	45.8	45.4

Source: Calculations on the basis of data from ILO's Laborsta database  
Note: 1980 is based on census data and the subsequent years on sample survey data.

On the basis of Tables 13 and 14, the following conclusions are reasonable to arrive at: First, the decline in the share of female employment in agriculture has been much sharper than that of males. This is true even of the high growth phase (1987-96). In the high

growth phase, the share of agriculture in female employment declines by nearly 14% as opposed to a little more than 10% for males. For females the decline in the share of agriculture is shared out by both industry and services – increasing by 8.4 and 5.4% respectively. For males the entire decline in agriculture was absorbed by industry. Indeed the share of services in male employment also declined slightly, which too was absorbed by industry.

Second, in low employment growth phase (1996-2000), male employment structure changes very little. And the little change there is goes from services to industry. In female employment however employment structure continues to change – the share of agriculture declines by 3% and that of industry by nearly 1%. The share of services increases as a result by nearly 4%.

As a result of these trends, the share of females in service sector employment secularly increases, from 0.31 in 1980 to 0.40 in 2000. The share of males in industrial employment on the other hand after declining from 0.71 to 0.66 between 1980 and 1987, increases to 0.69 by 2000. It is worth reminding ourselves that industry has consistently had a higher output per unit labour as compared with services (see Table 7).

Clearly then a pattern emerges where both in high and low growth phases, as the employment structure diversifies away from agriculture, male employment is more privileged and more likely to switch to industry whereas female employment is more likely to switch to services.

In conclusion, one of the reasons underpinning Malaysia's sustained growth in per capita incomes has been the diversification of both output and employment towards higher output per unit labour activities, particularly industry. Importantly, in the high growth phase output and employment structures have moved in the same direction. Despite impressive structural transformation, labour absorption has been of a kind where both agriculture and services now suffer from 'relative surplusness' of labour, constraining future output per unit labour growth. There is also a clear gender dimension to sustaining this growth. Not only does the female workforce act as a shock absorber to labour market movements, men are more likely to be employed in the higher output per unit labour industry and women in lower output per unit labour services. The greater likelihood of women switching to services has added to the 'surplusness' of labour in services, which becomes an increasing concern as the service sector emerges as the largest employer in the economy. Finally, female participation ratios at least until 2000, remained significantly lower than for males, adding another dimension to the gendered description of the workplace.

## Thailand

Thailand is a lower middle income economy with a 2006 per capita income of \$2990. Like Malaysia it has seen impressive rates of economic growth. Indeed over the period 1986-96 the Thai economy expanded slightly faster than the Malaysian (9.6% as opposed to 9.2) though the subsequent deceleration was also sharper.

Table 1: Thailand: Income growth rates		
	1986-96	1996-2006
GDP	9.6	3.3
GDP per capita	8.1	2.3
Source: World Bank: Thailand at a Glance		

If Thailand and Malaysia's growth performances are broadly comparable, their employment performances are not, with the former emerging much the worse in comparison. Over both the high and the low growth period, Thailand has a much lower employment elasticity of growth – 0.29 and 0.34 respectively over the periods 1986-96 and 1996-2006 as compared with Malaysia's 0.49 and 0.52.

Table 2: Thailand: Employment growth rates		
	1986-96	1996-2006
Total employment	2.74	1.12
Female employment	2.70	1.30
Male employment	2.78	0.99
Source: Calculations on the basis of data from ILO's Laborsta database		

This is perhaps one of the reasons why its record in alleviating poverty is not as stellar. Whereas like Malaysia, Thailand would seem to have eradicated abject poverty, a significant proportion of the population remains poor, when measured by the \$2-a-day norm, even though this ratio has declined appreciably over time (see Table 3).

Table 3: Thailand: Headcount Poverty Ratios		
	\$1	\$2
1981	22	55
1988	18	54
1992	6	37
1996	2	28
1998	0	28
1999	2	32
2000	2	32
2001	1	26
Source: World Bank, Povcal Net		

### Structural change in output and employment

Structural change in output terms presents two distinct patterns as between the high and low growth phases. In the high growth phase the shares of both agriculture and services decline by 6.2 and 1.6% respectively (see Table 4). As a consequence the share of industry increases by 7.7%. As a result the share of industry increases from a third of GDP to more than 40%. Within industry, the share of manufacturing increases by 5.8%. Therefore it would not be unreasonable to infer that in the high growth phase, output growth was generally driven by industry.

In the low growth phase structural change in output has quite a different character. The share of services continues to decline, but alongside industry the share of agriculture also increases. The share of services declines by 5% and that of industry and agriculture increases by 3.8 and 1.2% respectively. It is also worth noting that the share of manufacturing increases by 5.3%, rising by more than that of industry. Output growth in the low growth phase is driven therefore primarily by manufacturing followed by agriculture.

Over the long period, when we take both the high and low growth phases together, the most noteworthy aspect of structural change in output has been the decline in the share of services and the increase in the share of industry. The share of services declines by almost 7%, from more than 51 to almost 45%. The share of industry increases by more than 11%, from a little more than 33 to almost 45%. Within industry, the share of manufacturing increases by 9%, from almost 24 to 35%. Therefore at the end of two decades of growth, having started out the period from unequal positions, industry and services end the period with roughly equal shares of output.

	1986	1996	2006
Agriculture	15.7	9.5	10.7
Industry	33.1	40.8	44.6
of which Manufacturing	23.9	29.7	35
Services	51.3	49.7	44.7

Source: World Bank: Thailand at a Glance

Structural change in employment has somewhat different patterns. Perhaps the most noteworthy aspect of structural change in employment is the continued dominance of agriculture in employment despite a substantial decline in its share. In the high growth phase, the period 1986-96, agriculture's share declines by almost 17% and that of industry and services increases by a little more than 10 and 6.5% respectively. It is worth recalling in this context that in the high growth phase the services share in output had declined. In the low growth phase, the period 1996-2006, the major difference is that the share of industry in employment does not change at all. Indeed if anything it declines marginally. Therefore the 7.9% decline in the share of agriculture is entirely absorbed by services, which sees its share increase by a similar amount. It will be recalled that in the low growth phase industry continued to see an increase in its output share whereas services saw a continuing decline.

Given these employment patterns, there are two noteworthy aspects. First, despite a more than 24% decrease in agriculture's share, given its overwhelming dominance in 1986, it still accounts, at 42%, for the largest share of employment in the economy. Second, whereas there is broad consonance between structural change in output and employment in the high growth phase there is a mis-match in the low growth phase. The importance of both of these will become apparent in a moment.

	1986	1996	2006
Agriculture	66.7	50.0	42.1
Industry	10.6	20.8	20.6
Services	22.6	29.1	37.0

Source: Calculations on the basis of data from ILO's Laborsta database

The problems with Thailand's labour absorption patterns become immediately apparent when we put together change in output and employment shares together in Table 6. First, Thailand suffers from a very high degree of 'relative surplusness' of labour in agriculture – it begins the period with employment 4 times more than what it ought to be given output shares. Second, despite the decline of 24% in agriculture's employment share, it actually has made very little difference to the relative surplusness of labour in the sector. Indeed, it actually worsens slightly in the high growth phase but improves somewhat in the low growth phase to end the two decade period practically unchanged. Third, the positive aspect about growth has been that the relative scarceness of labour in both industry and services declines. Fourth, even in this respect, where industry is concerned the decline in the high growth phase is undone somewhat by an increase in the low growth phase. However, given that both industry and services had very high scores in terms of relative scarceness, both have seen significant declines, with the relative decline much sharper for services.

	1986	1996	2006
Agriculture	0.24	0.19	0.25
Industry	3.13	1.96	2.16
Services	2.27	1.71	1.21

Source: Calculations on the basis of data from ILO's Laborsta database and World Bank

To complete this picture of structural change in output and employment, per capita income growth in the high growth period is underpinned by the fact that labour switches to industry and services, both of which have substantially higher output per unit labour (see Table 7). Industry's output per unit labour though is significantly higher than that of services. Indeed, in the high growth phase, per capita income growth is also aided by the fact that of output per unit labour in services is grows faster than that of industry. As a result the ratio of services' output per unit labour to that of industry increases from 0.73 to 0.87 between 1986 and 1996.

In the low growth period it will be recalled that labour absorption in industry declined quite sharply and labour switching from agriculture was largely absorbed by services. Even though services have a much higher output per unit labour than agriculture and therefore the switch is beneficial, per capita income growth would have been constrained by the fact of a very sharp slowdown in the growth of output per unit labour in services. Indeed it actually declined even in nominal terms between 1996 and 2006. As a result the ratio of services output per unit labour to that of industry decline very sharply – from 0.87 in 1996 to 0.56 in 2006.

Finally, despite the fact that agriculture suffers from very low levels of output per unit labour, its growth during both the high and low growth have would have contributed to per capita income growth. During both it grew faster than output per unit labour in industry. This is quite creditable given that in the high growth phase output per unit labour in industry doubled, even though in nominal terms. Therefore the ratio of agriculture's output per unit labour to that of industry rose consistently through our two periods – it increased from 0.075 in 1986 to 0.10 in 1996 and further to 0.12 in 2006.

	1986	1996	2006
Total	1615	5637	5676
Agriculture	380	1070	1441
Industry	5052	11071	12269
Services	3667	9618	6849

Source: Calculations on the basis of data from ILO's Laborsta and the UN SNA database.

To sum up the discussion on structural change in Thailand, industry in general and manufacturing in particular have been important drivers of output growth. As a result, industry's share of output has increased significantly and that of services has declined. Second, this output growth is however associated with relatively low employment elasticities of employment and as a result high putput growth has not translated into high employment growth. Third, despite significant change in employment structures, employment growth has not made any difference to relative surplusness of labour in agriculture. Agriculture continues to be saddled with very high levels of relatively surplus labour. But the rapid transfer of labour out of agriculture has happened alongside a relatively rapid growth in output per unit labour in agriculture in both periods and this would have aided per capita income growth. Fourth, but growth has also meant a significant increase in employment shares of both industry and services both of which have much higher levels of output per unit labour, and thereby underpinning per capita income growth. In addition the service sector in the high growth phase saw a relatively high rate of growth in output per unit labour. And this again would have aided per capita income growth. Fifth, accelerated labour absorption by industry and services has reduced the relative scarceness of labour in both. Finally, however the decline in labour absorption by industry in the low growth phase has meant that the bulk of new employment is in services which also saw a very sharp decline in the growth output per unit labour. This would surely have constrained per capita income growth.

#### Gender and labour use patterns

	1986-96	1996-2004
Overall Labour Force (LF)	2.43	1.53
Female LF	2.36	1.95
Male LF	2.46	1.13

Source: Calculations on the basis of data from ILO's Laborsta database

In the high growth phase, female and male labour force growth rates were roughly similar though the former grew at a slightly slower pace than the latter. In the low growth phase even though there was deceleration in both that in male labour force growth rates was much sharper than in female (see Table 8). It will be recalled that in employment outcomes however the opposite is true – the deceleration in female employment growth rates was much sharper than for males (see Table 2).

As a result, even though overall PR increases from 0.51 to 0.56 between 1984 and 2006 (see Table 9), FPR and MPR exhibit different patterns. MPR rises from 0.54 to 0.6 over the same period whereas FPR increases slightly and then falls and therefore ends the period more or less unchanged, going from 0.48 to 0.49. In the low growth phase however both FPR and MPR increase – the former from 0.49 to 0.51 and the latter from 0.6 to 0.62.

	PR	PR Female (FPR)	PR Male (MPR)
1984	0.51	0.48	0.54
1987	0.53	0.50	0.56
1988	0.54	0.50	0.57
1990	0.55	0.51	0.58
1996	0.54	0.49	0.60
1998	0.54	0.49	0.60
2000	0.54	0.49	0.60
2003	0.55	0.49	0.61
2004	0.56	0.50	0.62
2005	0.57	0.52	0.62
2006	0.56	0.51	0.62

Source: Calculations on the basis of data from ILO's Laborsta database

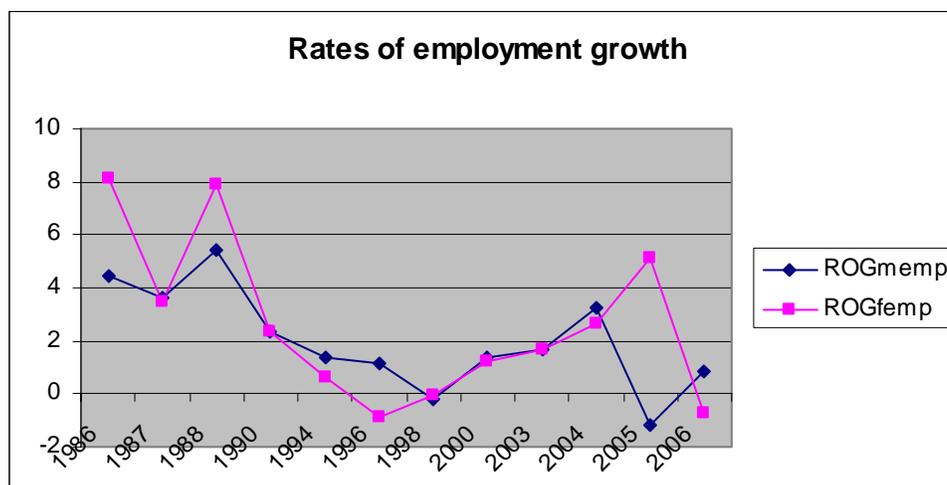
The deceleration in employment growth rate shows clearly in relative employment levels. The ratio of employed workforce to the LF (see Table 10) increases from 0.94 in 1986 to 1.04 in 1994. It then declines to 0.97 in 1998 before increasing to 0.99 in 2006. The decline in the ratio takes place despite the fact that LF growth decelerated over the low growth phase. But clearly as we have seen employment growth deceleration was faster. But nonetheless deceleration in LF growth meant that increase in open unemployment was kept in check.

	Employed/LF
1984	0.93
1986	0.94
1987	0.97
1988	1.01
1990	1.00
1994	1.04
1996	0.99
1998	0.97

2000	0.98
2003	0.98
2006	0.99
Source: Calculations on the basis of data from ILO's Laborsta database	

Even though we had noted that in the high growth phase employment growth was higher than in the low growth phase, what Table 11 and the subsequent graph make clear is that acceleration in employment was limited to the early part of the high growth phase. After peaking in 1988, both female and male employment decelerate quite sharply with the slowdown in female employment growth much sharper than that in male. Even when employment growth revives after 1996, the increase in employment rates of growth is nowhere near levels achieved in the three year period between 1986 and 1988. Both in the deceleration phase in the shallow recovery that follows, female employment growth is consistently below that of males. This is brought out not only in the employment graph but also in the last column of Table 11 where the ratio of male employment growth to female employment growth is consistently greater than 1 for most of the period.

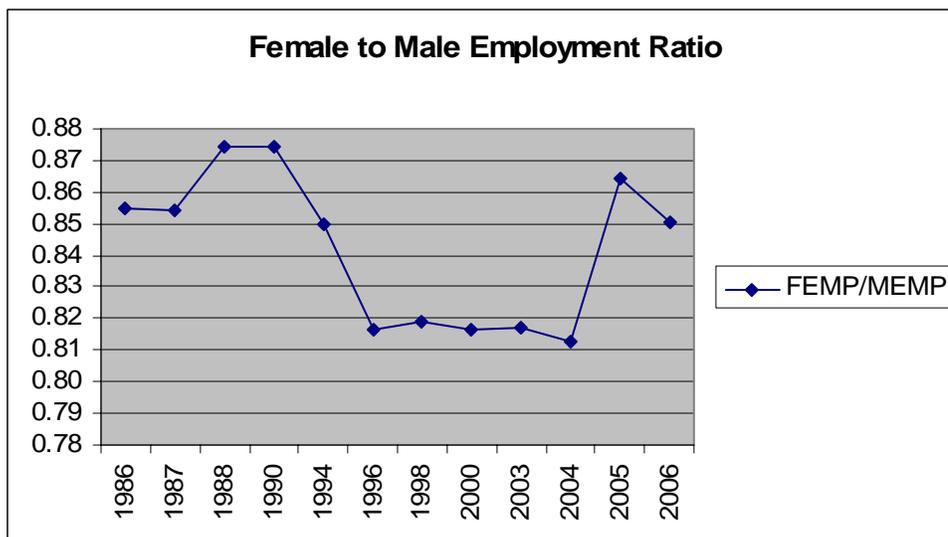
	Female employment growth (1)	Male employment growth (2)	Total employment growth	(2)/(1)
1986-87	3.50	3.60	3.55	1.03
1987-88	7.93	5.46	6.60	0.69
1988-90	2.34	2.35	2.34	1.01
1990-94	0.62	1.36	1.01	2.19
1994-96	-0.87	1.14	0.22	-1.31
1996-98	-0.05	-0.22	-0.15	4.09
1998-2000	1.26	1.41	1.34	1.12
2000-03	1.71	1.68	1.69	0.99
2003-04	2.68	3.24	2.98	1.21
2004-05	5.12	-1.16	1.65	-0.23
2005-06	-0.75	0.86	0.12	-1.15
Source: Calculations on the basis of data from ILO's Laborsta database				



As a result the ratio of female employment levels to male employment levels (FEMP/MEMP) consistently declines for most of the high growth and the low period, if one leaves out the period 1986-88 (see Table 12 and the associated graph). From 0.87 in 1988 it declines secularly to 0.81 in 2004 before rising again. The decline in the FEMP/MEMP ratio has to be contextualised within the fact that FLF growth rates were higher than MFL growth rates during the low growth phase. All this gives credence to the fact that, as in Malaysia, the FLF acts as a shock absorber to labour market movements.

Table 12: Thailand: Female-Male employment ratio	
	FEMP/MEMP
1986	0.86
1987	0.85
1988	0.87
1990	0.87
1994	0.85
1996	0.82
1998	0.82
2000	0.82
2003	0.82
2004	0.81
2005	0.86
2006	0.85

Source: Calculations on the basis of data from ILO's Laborsta database



Finally in terms of labour use the patterns across gender are not as strikingly different as in Malaysia. It is also worth noting however that female labour participation in Malaysia is much lower than in Thailand – in 2000 it 0.29 former as opposed to 0.49 in the latter.

Even though the differences are not as stark, there are differences worth noting. The decline in the share of agriculture in female employment is almost 28% (see Table 13) as opposed to 22% for males (see Table 14). The increase in the share of services in female employment is 17% as opposed to 12% for males. These differences in labour use patterns between gender mean that at the end of our decade period in Thailand women seeking employment are more likely to be in then service than their male counterparts. It is the reprise of a theme we have already come across in Malaysia. The share of industry in female and male employment is however not very different, unlike the Malaysian instance.

	1986	1996	2006
Agriculture	68.2	51.5	40.5
Industry	8.5	17.5	19.0
Services	23.2	30.9	40.3

Source: Calculations on the basis of data from ILO's Laborsta database

	1986	1996	2006
Agriculture	65.5	48.8	43.1
Industry	12.4	23.5	22.0
Services	22.1	27.7	34.2

Source: Calculations on the basis of data from ILO's Laborsta database

In conclusion, first, despite significant change in employment structures low productivity agriculture still accounts for the bulk of employment in Thailand. This has to be seen in the context of the fact that in 1986 Thailand had very high levels of relatively surplus labour in agriculture and that output and employment growth have done little to reduce these high levels of 'relative surplusness'. This surely is an important determinant of the relatively high levels of \$2-a-day poverty levels. Second, on the positive side, in the high growth phase structural change in output and employment moved in tandem as a result of which labour absorption in both industry and services improved. Third, this is importance for per capita income growth because both have significantly higher levels of output per unit labour than agriculture. In addition in the high growth phase both agriculture and services saw relatively high growth in output per unit labour. Fourth, improved labour absorption meant that the 'relative scarceness' in both sectors declined. Fifth, in the low growth phase some of these gains were lost with a decline in labour absorption in industry and a decline in output per unit labour in services, the sector that absorbed all the labour switching out agriculture. Sixth, as in Malaysia the FLF appears to work as a shock absorber to labour market changes – with female employment decelerating faster than the male employment during employment downturns. Finally, in addition changes in

labour use patterns means as female and male labour switches out of agriculture, an employed female is more likely to be in services than her male counterpart.

### IIB. Medium per capita income growth economies

#### Indonesia

In 2006 Indonesia had a per capita income of \$1420 substantially lower than both Malaysia and Thailand. But like other economies of the region 1986-96 was a period of high growth where per capita income expanded at the rate of 6% p.a. and like other economies of the region saw a sharp deceleration in growth in the decade following (see Table 1).

	1986-96	1996-2006
GDP	7.9	2.7
GDP per capita	6.1	1.3

Source: World Bank: Indonesia at a Glance

The deceleration obviously impacted employment growth as well as Table 2 makes clear. But what is also worth noting is that deceleration in employment growth was nowhere as sharp as that in output growth. As a result, employment elasticity of output growth actually sees an appreciable increase – from 0.32 over the high growth period to 0.59 in the low growth period. This is in contrast to Thailand where the decline in employment growth was of a similar magnitude as that of output growth. Equally worthy of note, the male employment growth rate is marginally higher than that of female and remains so in the low growth period. This is unlike Malaysia and Thailand where female employment decelerated appreciably faster than male employment in the low growth phase.

	1985-96	1996-2006
Total employment	2.55	1.60
Female employment	2.57	1.60
Male employment	2.65	1.65

Source: Calculations on the basis of data from ILO's Laborsta database

	\$1	\$2
1987	28	75
1993	17	64
1996	14	60
1998	26	76
1999	8	55
2000	7	55
2002	8	52

Source: World Bank, Povcal Net

Abject poverty is down to single digit levels (see Table 3) and interestingly poverty decline continues despite the growth slowdown in the period 1996-2006. However the bulk of the population still lives below the \$2-a-day poverty line. Despite a secular decline in this poverty measure in 2002 52% of the population lived below the \$2-a-day poverty line.

Structural change in output and employment

	1985	1996	2006
Agriculture	19.9	14.2	13.7
Industry	33.2	41.4	42.4
of which Manufacturing	16.8	26.9	26.8
Services	46.9	44.4	44
Source: UN SNA			

In the high growth phase, structural change in output is much more muted than in Thailand let alone Malaysia. What change there is, is similar to Thailand's with a decline in the output shares of both agriculture and services to the benefit of industry. Between 1985 and 1996, agriculture share declines by 5.6% and services share by 2.5% and industry's share increasing by a little more than 8%. It is worth noting that manufacturing sees its share by increase by more than 10%, substantially more than the increase in industry's share. Therefore it would be fair to infer that output growth in the high growth phase was manufacturing driven.

During the low growth phase however there is practically no change in output structures. What little change there is a continuation of the high growth pattern with industry increasing its share of output by 1% at the expense of both agriculture and services.

	1985	1996	2006
Agriculture	54.7	44.0	44.5
Industry	13.4	18.1	18.0
Services	31.8	37.9	37.6
Source: Calculations on the basis of data from ILO's Laborsta database			

Employment structures see a somewhat greater movement with a decline of nearly 11% in agriculture's share. The decline in agriculture is shared out between industry that sees its share increase by nearly 5% and services where it increases by a little more than 6%. In the low growth phase in employment structure as well there is practically no change. Over the period 1996-2006 agriculture's share sees a marginal increase of 0.5% at the expense of industry and services. Therefore in terms of structural change, in the low growth phase Indonesia goes through a period of economic stasis. This is contrast to both Malaysia and Thailand, where low productivity agriculture saw a decline in employment shares even during the low growth phase. In Malaysia the decline slowed down

considerably but Thailand, a substantial reduction in agriculture’s employment shares continued even as agriculture’s output share increased marginally.

The movement of the R-O/E ratio (see Table 6) reflects this stasis and what little change there is, is in the wrong direction except in services. In the high growth phase, there is a worsening of the ‘relatively surplusness’ of labour in agriculture, which is already saddled with a very high degree of relatively surplus labour. The ‘relative scarceness’ of labour in industry declines only marginally and that gain is almost entirely reversed in the low growth phase. It is only services that see a significantly decline in the ‘relative scarceness’ of labour in the high growth phase and this is not reversed in the low growth phase that follows.

In Thailand as well we had seen a worsening of the ‘relative surplusness’ of labour in agriculture. Indeed the extent of relatively surplus labour in agriculture in Thailand is marginally higher than in Indonesia. The major difference between the two however is that robust structural change in employment where agriculture’s share declined by more than 23% and as a result saw a significant proportion of labour switching to higher output per unit labour sectors. Structural change therefore contributed to per capita income growth in Thailand as well as saw the decline in the relative scarceness of labour in both industry and services even though it did not materially impact the ‘relative surplusness’ of labour in agriculture.

Unfortunately the muted nature of structural change in Indonesia meant the its contribution to per capita income growth was not as significant as that Malaysia and Thailand. Indonesia therefore suffers not only due to agriculture accounting for a very high proportion of employment – even in 2006 – it accounted for the bulk of the country’s employment but also due to the slow diversification away from it. In the low growth phase agriculture actually gains employment share, even though marginally, at the expense of industry and services.

Table 6: Indonesia: Ratio of Output share to employment share (R-O/E)			
	1985	1996	2006
Agriculture	0.36	0.32	0.31
Industry	2.48	2.29	2.36
Services	1.47	1.17	1.17
Source: Calculations on the basis of data from ILO’s Laborsta database and UN SNA			

In addition, even though both industry and services have significantly higher output per unit labour than agriculture, the bulk of the diversification it will be recalled was accounted for by services, which has a significantly lower output per unit labour than industry (see Table 7). What made matters worse was that both agriculture and services had relatively slow growing output per unit labour, thereby diminishing their contribution to per capita income growth. As a result of relatively slow growing output per unit labour the relative position of both agriculture and services declined – the ratio of agriculture’s output per unit labour to that of industry’s declined from 0.15 in 1985 to 0.14 in 1996 and 0.13 in 2006; the same ratio for services declined from 0.59 in 1985 to 0.51 in 1996 and further to 0.50 in 2006.

	1985	1996	2006
Total	1537	2917	3833
Agriculture	559	944	1181
Industry	3809	6669	9042
Services	2265	3417	4490

Source: Calculations on the basis of data from ILO's Laborsta and the UN SNA database.

To sum up this discussion, first, despite high rates of output growth, structural change in both output and employment has been slow in Indonesia as compared with high growth economies such as Malaysia and Thailand. As a result, Indonesia has lost potential gains from faster diversification into activities with higher levels of output per unit labour. Second, in addition, industry, the sector with the highest output per unit labour also absorbed less labour as compared to services. Third, per capita income growth would have suffered from the fact that output per unit labour grew relatively slowly in both agriculture and services. Fourth, agriculture then suffers not only because it continues to account for a high share of employment but also from an increase in 'relative surplusness' of labour and a relatively slow growth in the output per unit labour. Fifth, the highest output per unit labour sector, industry, saw very little improvement in 'relative scarceness' of labour, though there was some improvement in the services sector. Finally, the increase in the relative surplusness of labour in agriculture which already was at very high levels alongside a relatively slow growing output per unit labour in the sector might be a contributory factor towards the high proportion of the population that survives on less than \$2 a day. Robust growth in per capita incomes takes place alongside slow declines in poverty.

#### Gender and labour use patterns

We now turn to a discussion of gender issues related to labour absorption.

	1985-96	1996-2006
Overall Labour Force (LF)	3.76	2.36
Female LF	5.35	2.00
Male LF	2.88	2.60

Source: Calculations on the basis of data from ILO's Laborsta database

LF growth rates decelerate as between the high and low growth phases. Unusually however, in the high growth phase, FLF expands significantly faster than MLF. In part this might have to do with the starting from a lower base as far as female employment is concerned as evidenced by the low FPR in 1985 (see Table 9). It is worth recalling however, Malaysia had similarly low MPRs but did not see the FLF expanding significantly faster than MLF.

In the low growth phase however the deceleration in FLF growth is substantially greater than that in MLF and as a result the former grows significantly slower than the latter. In

both these attributes – its higher growth rate as compared with the MLF in the high growth phase and its slower growth rate in the low growth phase – FLF behaves differently than both Malaysia and Thailand. Particularly in the low growth phase in the latter two economies, FLF grew faster than MLF.

	PR	PR Female (FPR)	PR Male (MPR)
1985	0.38	0.27	0.49
1986	0.40	0.31	0.49
1988	0.41	0.33	0.50
1989	0.41	0.33	0.49
1994	0.44	0.34	0.53
1996	0.45	0.34	0.55
1998	0.45	0.35	0.56
2006	0.48	0.35	0.62

Source: Calculations on the basis of data from ILO's Laborsta database

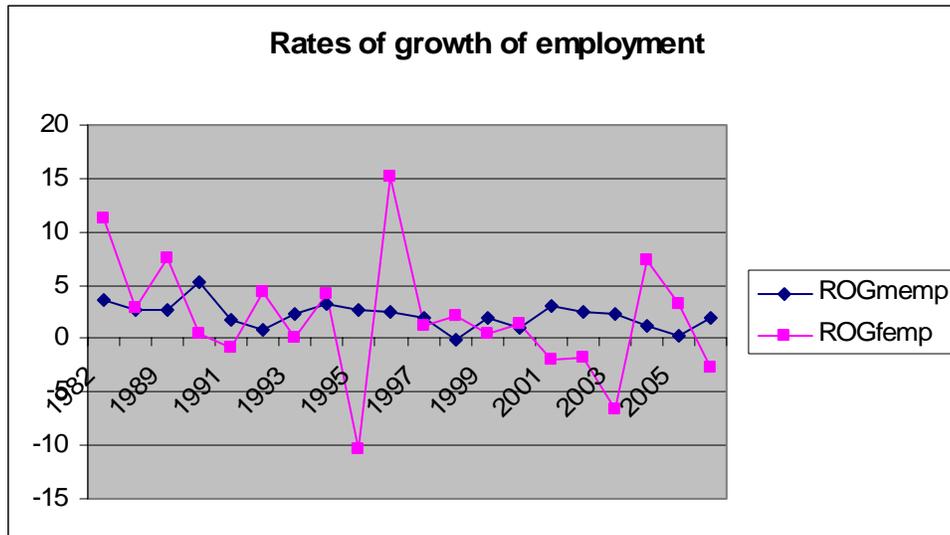
It is worth noting that Indonesia saw a sharper increase in labour participation ratios relative to other economies. Albeit starting from a lower base, it increased from 0.38 in 1985 to 0.48 in 2006 and increase of 13%. This compares with an increase of 0.51 to 0.56 for Thailand and decline of from 0.44 to 0.41 between 1987 and 2000 for Malaysia. In the Indonesia this increase in labour force participation was absorbed into gainful employment in the high growth phase as suggested by the fact that the ratio of employed workforce to LF stayed close to 1 – declining from 1.03 to 0.99 between 1985 and 1998. In the low growth phase however this ratio declined 0.89 by 2006 suggesting an increase in open unemployment.

In Indonesia therefore the high growth phase sees a fairly rapid growth of the labour force and its absorption into the employed workforce but with relatively little structural change in labour absorption patterns. In this it is quite distinct from growth outcomes in both Malaysia and Thailand, the two high per capita growth Asian economies in our sample.

	Female employment growth (1)	Male employment growth (2)	Total employment growth	(2)/(1)
1985-89	7.56	2.60	4.39	0.34
1989-90	0.36	5.26	3.30	14.46
1990-93	1.19	1.63	1.45	1.37
1993-96	2.94	2.83	2.74	0.96
1996-2000	1.23	1.15	1.19	0.94
2000-03	-3.47	2.60	0.35	-0.75
2003-05	5.28	0.69	2.27	0.13
2005-06	-2.62	1.86	0.24	-0.71

Source: Calculations on the basis of data from ILO's Laborsta database

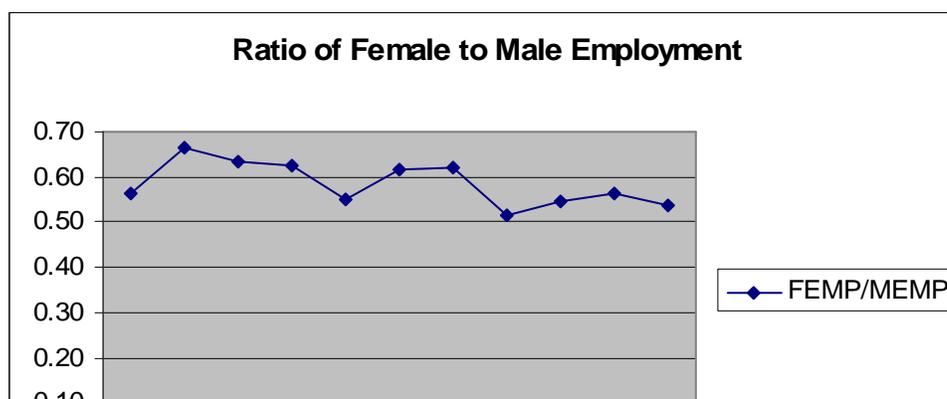
The important aspect of Table 10 is that, if we leave out the period 1985-89, male employment growth has been consistently higher than female employment growth particularly in periods of deceleration in employment growth (see the last column of Table 10). The associated graph brings out this point much more clearly.



As a result, the FEMP/MEMP ratio, after rising from 0.56 to 0.66 between 1985 and 1989 (see Table 11), is on a secularly declining trend for the rest of our period and in 2006 stood at 0.54. Again the associated graph brings this out very clearly.

Table 11: Indonesia: Female-Male employment ratio	
	(FEMP/MEMP)
1985	0.56
1989	0.66
1990	0.63
1993	0.63
1995	0.55
1996	0.62
2000	0.62
2003	0.52
2004	0.55
2005	0.56
2006	0.54

Source: Calculations on the basis of data from ILO's Laborsta database



Finally turning to patterns of labour use across gender (see Tables 12 and 13) structural change in employment has not affected female and male employment differentially, unlike in Malaysia and Thailand. As a result employment patterns for females and males are not very different when we compare 1985 and 2006. The share of female employment in agriculture declines over that period by 9% as opposed to a little under 11% for males; in services it increases by a little more than 6% as opposed to 5% for males; in industry it increases by a little under 3% for females as opposed to a little more 5% for males. What differences there are would appear to do with slightly different initial starting points.

	1985	1996	2006
Agriculture	53.6	45.0	44.6
Industry	12.2	15.9	15.0
Services	34.0	39.1	40.5
Source: Calculations on the basis of data from ILO's Laborsta database			

	1985	1996	2006
Agriculture	55.3	43.4	44.4
Industry	14.1	19.5	19.6
Services	30.6	37.1	36.0
Source: Calculations on the basis of data from ILO's Laborsta database			

In conclusion, first, in the high growth phase structural change in output and employment in Indonesia was relatively muted and therefore would have contributed little to per capita income growth, as the pace of redeployment of labour from low output per unit labour (agriculture) to higher output per unit labour sectors (particularly industry) was relatively slow. Second, as a result agriculture still accounts for the bulk of employment in the Indonesian economy and is characterised by an increasing 'relative surplusness' of labour and relatively slow growing output per unit labour. The problem is compounded by the fact that agriculture begins the period (1985) already saddled with very high levels of relatively surplus labour. Third, on the other hand, labour force participation ratios saw a significant increase in the high growth period and this was largely absorbed into gainful

employment of some kind. Fourth, in the low growth period structural change in output and employment almost ceases. Fifth, it is also noteworthy that whereas the female labour force still appears to play the role of shock absorber, there are no appreciable differences in labour use patterns between females and male.

## India

India had a per capita income of \$910 in 2006 and unlike South-East Asian economies which saw a significant deceleration in economic growth in the period 1996-2006 has seen a sustained increase in per capita incomes in the two decades between 1986 and 2006, though no where near the levels witnessed by either Malaysia or Thailand in their high growth phases.

	1986-96	1996-2006
GDP	5.5	6.4
GDP per capita	3.5	4.7

Source: World Bank: India at a Glance

India's employment performance (see Table 2) has been patchy with periods of reasonable growth interspersed with periods of deceleration and decline in employment elasticities. The period 1993/94-1999/2000 for example where employment growth decelerated to less than 1% p.a., employment elasticities declined to 0.15 from 0.41 in the period prior (1983-1993/94). Even though the 1999/2000 – 2004/05 saw a revival of employment growth and an improvement in employment elasticities (0.48), it was unable to keep pace with LF growth which had also saw an unprecedented increase over that period.

	1983-1993/94	1993/94-1999/2000	1999/2000 – 2004/05
LF	2.05	1.03	2.93
Employment	2.04	0.98	2.89

Source: Planning Commission (2001) and Rangarajan et al (2007)

India's patchy employment performance is at least in part responsible for India's relatively poor performance in terms of poverty alleviation. And even though poverty has declined, significant proportions of the population still live below the \$1-a-day poverty, particularly in rural India, let alone the \$2-a-day poverty line (see Tables 3a and 3b).

It is instructive to compare Indonesia and India, both of which have roughly comparable per capita incomes, on poverty alleviation. In 2002 Indonesia the \$1-a-day poverty ratio was in single digit levels and \$2-a-day poverty ratio stood at 52%. In 2004, poverty ratios for even for urban India, where a little more than 30% of India's population resides, were significantly higher than Indonesia's whichever metric one chose to use (see Table 3b). Rural India of course was even further behind. Finally it is also worth noting that declines in \$2-a-day poverty levels have been greater in urban India (decline of 13%) than in rural India (decline of 8%).

Table 3a: India: Headcount Rural Poverty Ratios in India		
	\$1	\$2
1983	54	92
1987	52	92
1992	60	94
1993	48	92
1999	42	88
2004	40	88
Source: World Bank, Povcal Net		

Table 3b: India: Headcount Urban Poverty Ratios in India		
	\$1	\$2
1983	28	75
1987	28	73
1992	27	72
1993	22	68
1999	20	61
2004	20	62
Source: World Bank, Povcal Net		

### Structural change in output and employment

Turning to issues of structural change in output (see Table 4), in the period 1983-1993/94 structural change has been rather slow as compared with the period 1993/94-2004/05. In the period 1983-1993/94 the output share of agriculture declined by a little under 6% and that of industry and services increased by 1 and a little under 5% respectively. In the period 1993/94-2004/05 there was significant acceleration in output structural change. The share of agriculture declined by nearly 11% and those of industry and services increased by around 1% and 10% respectively.

There are a few points worth noting about this process. First, the quickening of the pace of structural change affected agriculture and services. The pace of change in industry which was very slow in the first period remains so in the second. Indeed in the sub-period 1993/94- 1999/2000, the share of industry in output contracts slightly. Second, in both periods output growth is driven by service sector growth. This marks India as being quite different from Malaysia, Thailand and Indonesia where industry and manufacturing growth have been the major drivers of output growth, at least in their high growth phases. Third, even though the output growth rate increased a little between the two periods – from an average of 5% in the first to around 6.2% in the second – the increase is insufficient to account for the quickening of structural change. Finally, as result of this process of structural change services have emerged as the dominant sector of the economy. In 2004/05, at 54% they are almost twice the size of industry.

	1983	1993/94	1999/2000	2004/05
Agriculture	35.6	29.7	24.5	18.9
Industry	25.3	26.3	25.9	27.5
of which Manufacturing	16.0	16.1	15.2	16.0
Services	39.1	44.0	49.6	53.6

Source: On the basis of UN SNA database

If structural change in output was slow that in employment was slower still. In the first period, 1983-1993/94, the share of agriculture in employment declined by 4.5% and that of industry and services increased by 0.6 and 3.8% respectively. In the second period, 1993/94-2004/05, the share of agriculture in employment declined by 7.4% and this was even shared out between industry and services, the shares of both of which increased by 3.7%.

There are a couple of points that need to be noted about structural change in output and employment. To begin with, in the first period, structural change in output and employment broadly move in the same direction – in the case of both the decline in the share of agriculture is largely absorbed by services. In the second period however there is a mis-match between output and employment change. In the case of output change the bulk of the decline in agriculture's share is absorbed by services. In the case of structural change in employment the decline in agriculture's share was evenly absorbed by industry and services. The importance of this mis-match will become apparent shortly.

	1983	1993/94	1999/2000	2004/05
Agriculture	68.5	64	60.3	56.6
Industry	14.4	15	16.3	18.7
Services	17.3	21.1	23.5	24.8

Source: On the basis of Planning Commission (2001), NSSO (2006) and Himanshu (2007)

Second, what marks structural change in India out from Malaysia, Thailand and Indonesia is the process in agriculture. In India the decline in agriculture's employment share is less than its decline in output share in both periods. In the first period, agriculture's share in employment declined by 4.5% whereas its share in output declined by nearly 6%. In the second period, the period of relatively more rapid structural change, employment share declines by 7.4% as opposed to a decline of 10.8% for output. In comparison, in the high growth phase of Malaysia, Thailand and Indonesia the decline in employment shares is much greater than output shares – in Malaysia employment shares declined 11.5% as opposed to 8.1% for output; in Thailand it declined by 17% as opposed to 6.2% for output; and in Indonesia by 11% as opposed to 5.6% for output.

It is the rapid absorption of labour by non-agriculture that allows labour to switch away from low output per unit labour agriculture and thereby contribute to per capita growth. In Malaysia a rapid increase in the absorption of labour in industry allowed the bulk of labour to switch into the sector with the highest output per unit labour. In Thailand the process was somewhat less successful with the bulk of labour being absorbed in services

but nonetheless labour absorption by non-agriculture increased very rapidly. In India this process has been stymied and as a result, the share of employment in agriculture has declined by less than its decline in output and structural change has contributed little to productivity growth in the economy.

	1983	1993/94	1999/2000	2004/05
Agriculture	0.52	0.46	0.41	0.33
Industry	1.76	1.75	1.59	1.47
Services	2.26	2.08	2.11	2.16

Source: On the basis of Tables 4 and 5

As a result of the relative slowness of agriculture in shedding labour, Indian agriculture has seen a secular and sharp increase in the ‘relative surplusness’ of labour – the R-O/E ratio for agriculture declines from 0.52 to 0.33 (see Table 6). The extent of the decline is matched only by Malaysia where this ratio falls from 0.64 to 0.46. But critically for Malaysia there are three important differences – first, Malaysia starts the period with much lower levels of relatively surplus labour; second, agriculture accounts for a much smaller proportion of its employed workforce; and finally, rapid non-agricultural labour absorption meant that the increase in relative surplusness of labour in agriculture was balanced by a significant decline in the ‘relative scarceness’ of labour in both industry and services.

None of these conditions obtain for India. Therefore India is saddled with both a very high share of employment in agriculture as well as sharp increases in ‘relative surplusness’. Equally importantly, the gains from the decline of ‘relative scarceness’ have been marginal, particularly in the largest non-agricultural employer – services. The only heartening feature has been decline in the relative scarceness of labour in industry, particularly in the second period, which was also the period of relatively accelerated structural change.

Which brings us to the issue of mis-matched structural change in output and employment. We had noted that for India in the first period, the increases in output and employment shares in industry and services as result of structural change were broadly similar whereas in the second period they were dissimilar. As a result of this pattern relative scarcities decline in both sector in the first period – the decline in industry is marginal but then services accounted for the bulk of the increase in both output and employment in that period. In second period however as a result of mis-matched structural change, the relative scarcity of labour in services actually worsens while that in industry improves. The point at issue being that in case the sector with the highest output per unit labour suffers from ‘relative scarceness’ of labour’, which is normally the case in developing countries, mis-matched structural change worsens this problem and therefore worsens efficiency of labour use and broadly matched structural change mitigates this problem.

	1983	1993/94	1999/2000	2004/05
Total	727	817	1161	1635

Agriculture	378	380	472	547
Industry	1278	1434	1841	2401
Services	1644	1703	2452	3534
Source: On the basis of data from Planning Commission (2001), Sundaram (2007), Himanshu (2007) and UN SNA				

Lastly we turn to an examination of sectoral outputs per unit labour (see Table 7). Perhaps the most noteworthy aspect of Table 7 is that in India services is the most productive sector. This makes India distinctly different from the three south-east Asian economies that we have considered thus far where industry was the most productive sector. Therefore that output and employment growth has been driven by services in the first period is a good thing but the very slow decline in ‘relative scarceness’ of labour and its increase in the second period suggest that services is simply not absorbing labour fast enough to allow a rapid shift of labour out of agriculture. In the second period labour absorption by industry has seen some improvement and this is particularly welcome, but industry accounts for much smaller proportion of the employed workforce (19% as opposed to 25% for services) and therefore at the margin its impact is smaller. What one requires is improved labour absorption in both these sectors to allow for a rapid shift of labour out of agriculture.

Not only does services have the highest output per unit labour of the three sectors but its relative distance from both agriculture and industry is growing. Agriculture’s output per unit labour as a proportion of services declines secularly from 0.23 in 1983 to 0.16 in 2004/05. Industry’s output per unit labour as a proportion of services increases from 0.78 in 1983 to 0.84 in 1993/94 after which it declines to 0.69 in 2004/05. Therefore the slow transfer of labour away from agriculture burdens labour that remains not only with a low level of output per unit labour but a slow growing one. Compare this with Thailand where too agriculture accounts for a significant proportion of the employment. But per capita income growth is at least aided by the fact that agriculture has a relatively fast growing output per unit labour.

To the extent there has been some improvement in the absorption of labour by industry particularly in the second period, it is also useful to note that industry and services output per unit labour are much closer together than industry’s and agriculture’s, though the gap between former two has increased in the second period. This (the closeness of industry and services output per unit labour) is important because at least the little labour that is getting re-allocated is going to two sectors with relatively higher output per unit labour.

To sum up, the following conclusions can be drawn: First, very slow labour absorption by non-agriculture has meant that the decline in agriculture’s share in employment has been much smaller than the in its output share. In this it is different from Malaysia, Thailand and Indonesia. Therefore structural change in employment has not contributed significantly to per capita income growth. Second, as a result India continues to be saddled with a very high proportion of its employed workforce in agriculture, which has the lowest and slowest growing output per unit labour, as well as a sharp increase in the ‘relative surplusness of labour’. Third, this sharp increase in the ‘relative surplusness’ of labour and slow growth in output per unit labour alongside a very slow decline in the

‘relative scarceness’ of labour in the non-agricultural sectors might explain why poverty declines have been so slow despite sustained per capita income growth. Finally, India is quite different from all other economies in our sample, in that its service sector has the highest output per unit labour as compared with the other two. To that extent if output and employment change are driven by services as has happened in the first period, it would aid structural change driven per capita income growth. But very low rates of labour absorption in services hinders this process.

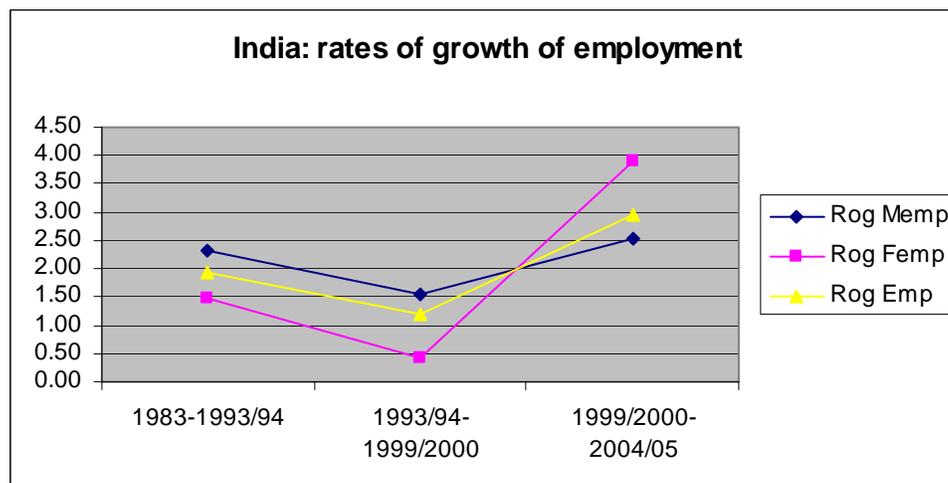
### Gender and labour use patterns

Table 8:India: Average rates of employment growth (%)				
	Female employment growth (1)	Male employment growth (2)	Total employment growth	(2)/(1)
1983-1993/94	1.48	2.32	1.93	1.56
1993/94-1999/2000	0.41	1.55	1.18	3.79
1999/2000-2004/05	3.91	2.55	2.97	0.65

Source: Calculations on the basis of data from ILO’s Laborsta database

For an economy that has sustained reasonably rapid rates of growth output and per capita incomes (see Table 1), India has performed particularly poorly with regard to employment. Between 1983 and 1993-4 employment grew at just under 2% with an employment elasticity of 0.41. In following the period, 1993/4-1999/2000, employment growth decelerated sharply to 1.2% and the elasticity fell to 0.15. In the next period, 1999/2000-2004/5, employment growth recovered to just under 3% with an elasticity of 0.49.

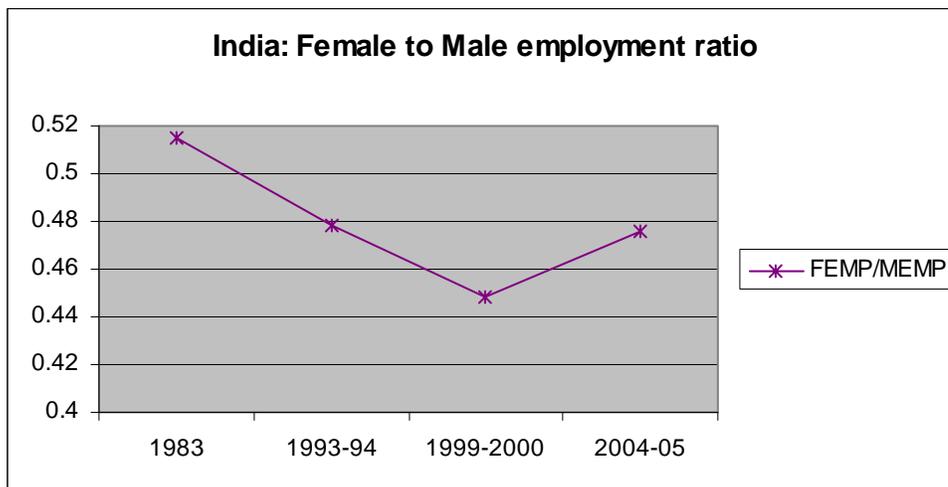
Compare this with Malaysia or Chile, which in their high growth phases between 1986 and 1996 had an employment elasticities of 0.49 and 0.54 respectively. Or India in the period 1977/78-1983, when the employment elasticity of growth was a healthy 0.51 (see Rangarajan 2007).



As Table 8 and the associated graph make clear, like the other Asian economies in this sample (other than Philippines which we discuss below), the rate of growth of male employment has been higher than that of female employment for a large part of the period 1983 to 2004/5. Also in keeping with its Asian counterparts, female employment growth decelerates much faster than male employment as employment decelerates and rises faster than its male counterpart in an upswing. We have only three data points on which to make this observation but it covers a fairly long period in which employment rates of growth have both fallen and risen, so we are reasonably confident in making this inference. Therefore in all likelihood in India as well female employment acts as a shock absorber to movements in the labour market.

	FEMP/MEMP
1983	0.52
1993-94	0.49
1999-2000	0.45
2004-05	0.48

Source: Calculations on the basis of data from ILO's Laborsta database



As a result the female to male employment ratio declines for most of our period, falling from 0.52 in 1983 to 0.45 in 1999/2000 before recovering to 0.48 in 2004/5. It is however worth noting that it still remains below the 1983 level.

If female and male employment growth rates behave differently, there is also a clear gender divide in terms of employment – as Tables 10 and 11 suggest - females are over-represented in agriculture and under-represented in industry and services.

	1983	1993/94	1999/2000	2004/05

Agriculture	81.2	79.3	76.8	74.1
Industry	10.1	10.6	11.5	13.3
Services	8.6	10.1	11.6	12.6
Source: On the basis of NSSO (2006), Sundaram (2007) and Himanshu (2007)				

Equally importantly, if the direction of change is similar for both females and males – both see declines in the share of employment in agriculture and increases in the shares of industry services with similar inter-sectoral distribution of the increases (see Tables 10 and 11) – the pace of change is markedly different. In the first period (1983-1993/94) agriculture’s share in female employment declined by 1.9% as opposed to 3.4% in male employment. In the second period (1993/94-2004/05), it declined by 5.2% in female employment as opposed to 9% in male. Clearly therefore, males have greater mobility out of agriculture besides being over-represented in sectors with much greater output per unit labour.

	1983	1993/94	1999/2000	2004/05
Agriculture	62.0	58.6	54.4	49.6
Industry	15.7	16.4	17.9	20.8
Services	22.3	25.0	27.8	29.6
Source: On the basis of NSSO (2006), Sundaram (2007) and Himanshu (2007)				

The gender divide however gets overstated because it gets conflated with the rural-urban divide. Given the importance of agriculture in India’s employment structure (in 2004/05 it accounted for 57% of total employment), it is only to be expected that rural and urban employment structures will look very different. But rural employment which accounted for 75% of total employment in 2004/05, is clearly much more than simply agriculture and therefore it is worthwhile comparing rural non-farm employment it with its urban counterpart.

	1983	1993/94	1999/2000	2004/05
Agriculture	81.5	78.4	76.2	72.6
Industry	9.1	10.2	11.3	13.6
Services	9.5	11.4	12.5	13.9
Source: On the basis of NSSO (2006), Sundaram (2007) and Himanshu (2007)				

Before we move to that discussion, it is worthwhile pointing to the high degree of similarity between female and rural employment structures (see Tables 10 and 12). The similarity suggests that there are perhaps differences between rural and urban female employment structures that might be worth exploring. And we will come to that shortly.

	1983	1993/94	1999/2000	2004/05
Agriculture	14.6	11.8	8.5	8.4
Industry	33.7	32.2	32.2	34.0
Services	51.7	55.9	59.4	57.6

Returning to the discussion of rural and urban employment structures, outside of the share of agriculture in the urban economy, the most notable difference between the two is that between the relative size of the industrial and service sectors. In the urban economy, the services sector is significantly larger than the industrial sector – in 1983 it is more than 50% larger. This difference rises to 85% in 1999/2000 before declining to 69% in 2004/05. In comparison, the sizes of the two in the rural non-farm economy are much closer together. In 1983 the service sector is 4% larger and even though this difference increases somewhat (at its peak in 1993/94 it was 12% larger), by 2004/05 they are back to being roughly the same size (2% larger).

The difference in relative sizes is important, because given that output and employment growth has been dominated by the service sector, which also has the highest output per unit labour, the urban non-farm economy has gained much more than its rural non-farm counterpart. The significantly lower weight of agriculture in the urban economy and the much higher relative weight of the services sector in the urban non-farm economy would explain why the urban economy's poverty alleviation performance has been better, particularly in the faster decline of \$2-a-day poverty measure (see Tables 3a and 3b). The rural economy on the other hand struggles with a much higher weight of agriculture and a sharp and secular increase in the 'relative surplusness' of labour between 1983 and 2004/05 (see Table 6). Little wonder then why, despite reasonable growth in per capita incomes, rural poverty is so persistent and why the \$2-a-day poverty measure is so slow to decline (see Table 3a).

Finally to return to the issue of gender difference, in 2004/05, agriculture, industry and services accounted for 6, 34 and 60% respectively of male urban employment and had seen relatively small movement in these shares over our two periods. Female urban employment on the other hand saw a nearly 13% decline in agriculture over our two periods and an almost 12% increase in its share of services. Therefore agriculture, industry and services accounted for 18, 32 and 50% respectively of female urban employment. Clearly then mobility out of agriculture was much less of a problem for urban females and they have an occupation structure that looks rather similar to that of urban males.

Rural females on the other hand, saw very little movement in their occupation structure and in 2004/05, agriculture, industry and services accounted for 83, 10 and 7% respectively of their employment. For rural males it was a different story – they saw an 11% decline in agriculture's share of their employment which was shared out evenly between industry and services and the bulk of this change took place in the second period. As a result, in 2004/05, agriculture, industry and services accounted for 67, 16 and 18% respectively of their occupational structure. Even though agriculture still accounts for the overwhelming bulk of rural male employment, relative to rural females they have had more success in diversifying out of agriculture.

Therefore the story of gender difference gets qualified somewhat. It is in rural India that gender difference bites the deepest – 8 out of 10 rural Indian females were in agriculture in 2004/05 and had an occupation structure that changed very slowly. As a result, it is they who had to bear the brunt of adjusting to a sharply increasing ‘relative surplusness’ of labour. The urban Indian female on the other hand has had relatively more mobility<sup>2</sup> and in 2004/05 had an occupational structure not very different from that of urban Indian males, who of course were on top of the heap as far as occupational structure goes.

Given this relatively vulnerable situation of rural females and that the surge in labour force growth rates in the period 1999/2000-2004/05 (see Table 2) is relatively skewed towards rural women (see Himanshu 2007) many have questioned whether one can take that increase as an indicator of economic vitality. Indeed Ghosh and Chandrasekhar (2006) and Himanshu (2007) have argued quite persuasively that this surge in labour force growth rate was not an autonomous phenomenon but the ex-post outcome of distress-driven employment seeking, particularly in agriculture and therefore a high rate of employment generation coexists with declining quality of employment, rising unemployment levels and stagnant or declining real wages.

To conclude, first, slow absorption of labour by non-agriculture means that the decline in agriculture’s share of employment has been slower than that of output. Second, there has been a very sharp and secular increase in the ‘relative surplusness’ of labour in agriculture. Third, India is different from other economies in that services have the highest output per unit labour of the three sectors and the highest relative growth. Therefore service sector driven growth of output and employment has contributed to per capita income growth. Fourth, agriculture not only has the lowest output per unit labour but also the slowest growing. Therefore slow transfer of labour away from agriculture burdens the economy not only with a very high share of employment in agriculture but to increasing surplus labour and slow growing output per unit labour. Fifth, outside the large share of agriculture in rural employment, the service sector is relatively much larger in the urban non-farm economy than in its rural counterpart. Given that output and employment growth has been service sector driven, this might be a contributory factor to differential poverty outcomes as between urban and rural areas. Sixth, rural female labour in has the highest proportion of its employment in agriculture and the lowest occupational mobility compared either with their male counterparts in rural India or female counterparts in urban India. They therefore bear the brunt of adjusting to the sharp increase in ‘relative surplusness’ of labour and slow growing output per unit labour. Finally, therefore there are good reasons to believe that the increase in labour force growth rates witnessed in the period 1999/2000-2004/05 which skewed towards rural

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<sup>2</sup> We must emphasise that it is purely a relative statement – as compared with rural females, urban females have a little more occupational mobility. There is gender discrimination in the urban labour market as well and urban females tend to be at the bottom of the food chain. There are huge issues related to the quality of employment – a lot of the new manufacturing jobs in the urban non-farm sector are in the informal sector and accounted for by females alongside an increase in female self-employment (see Ghosh and Chandrasekhar (2006) for this and a discussion of employment quality issues related to recent increase in employment growth rates). In addition NCEUS (2007) has clearly demonstrated that in manufacturing a substantial proportion of self-employment is accounted for by ‘homeworkers’, the bulk of whom are women.

female labour is an indication of distress participation despite an increase in employment growth rates.

## IIC. Low per capita income growth economies Bangladesh

Bangladesh had a 2006 per capita income of \$490. Like India, it too has not experienced a growth slowdown in the period in the period 1996-2006. Indeed, again like India, in the second period the both the economy and per capita income have grown faster than in the first (see Table 1). However relative to India growth has been somewhat more anaemic.

	1986-96	1996-2006
GDP	4.2	5.4
GDP per capita	1.8	3.4

Source: World Bank: Bangladesh at a Glance

Oddly however it is the slower growing first period that sees a rapid expansion in employment, fuelled largely by very high rates of growth of female employment (see Table 2). As we shall see later part of the high growth reflects starting from a very low base, but nonetheless female employment did expand quite impressively in the first period. The higher output growth period is associated with a sharp deceleration in employment (for the period 1996-2003). Indeed on average employment actually contracts at 1.1% p.a. over this period. Again, the contraction is due to a very sharp contraction in female employment, at the rate of 4.8% p.a. Male employment also decelerates as compared with the first period but remains in positive territory.

	1985/86-95/96	1996-2003
Total employment	8.1	-1.1
Female employment	62.1	-4.8
Male employment	2.7	1.1

Source: Calculations on the basis of data from ILO's Laborsta database  
Note: 2003 was the last year for which employment data was available for Bangladesh on Laborsta

Bangladesh's record in poverty alleviation over this period leaves much to be desired. Between 1983 and 2000, \$1-a-day poverty levels actually increase from 26 to 41%. The increase is not secular but the trend is clearly rising (see Table 3). \$2-a-day poverty levels have not increased but they have not fallen either – fluctuating around 84%. Bangladesh therefore has poverty indicators similar to rural India today.

	\$1	\$2
1983	26	84
1985	22	80
1988	35	86

1991	34	85
1995	33	82
2000	41	84
Source: World Bank, Povcal Net		

### Structural change in output and employment

Structural change in output (see Table 4) maintains a fairly steady pace of change through both the first (1986-1996) and the second period (1996-2006). In the first period the share of agriculture in output declines by 6.2% and this is shared out evenly between industry and services with output shares increasing by 3.4 and 3% respectively. Similarly in the second period, agriculture's share declines by 6.1% and that of industry and services increases by 3% each. Despite the fact that the increases in shares have been roughly equal, given that services 1986 already was by far the largest sector in the economy, output growth was in all likelihood driven by the service sector but with a robust performance from industry. Again like India, this pattern of structural change has meant services now account for more than 50% of output and in 2006 stood at 52.5%.

	1986	1996	2006
Agriculture	31.9	25.7	19.6
Industry	21.5	24.9	27.9
of which Manufacturing	14	15.4	17.2
Services	46.5	49.5	52.5
Source: World Bank: Bangladesh at a Glance			

In Bangladesh in the first period (1986-96), structural change in employment does not resemble anything like that in output. Shares of both industry and services in employment contract by 2.7 and 1.1% respectively and that of agriculture increases by more than 6%. Clearly the movement in shares does not add up, perhaps because of the nature of employment data in the 1980s. But what probably cannot be gainsaid is that agriculture gained in employment share and industry and services saw their shares decline.

In the second period (1996-2003) structural change in employment is more along expected lines – the share of agriculture declines by nearly 12% and that of industry and services increases by 4 and 9% respectively.

	1981	1986	1996	2003
Agriculture	58.9	56.5	63.2	51.7
Industry	11.0	12.3	9.6	13.7
Services	24.1	26.1	25.0	34.6
Source: Calculations on the basis of data from ILO's Laborsta database				

What marks out structural change in output and employment in Bangladesh from other countries is the complete mis-match between output change and employment change in the first period. In the first period the share of agriculture in output declines by more than

6% whereas its share in employment increases by almost 7%. That is to say structural change moves in exactly the opposite direction of what is expected. Similarly agriculture gains in employment share at the expense of both industry and services, both of whom lose shares even as their shares in output increases.

In the second period there is a much greater match between structural change in output and employment. Agriculture's share declines in both output and employment. And equally importantly the decline in agriculture's employment share (of nearly 12%) is significantly greater than that in its output share (of nearly 5%). As in the increase in output shares which is shared out evenly between industry and services, so with the increase in employment shares which too is shared out between services and industry, though with a skew towards the former.

	1981	1986	1996	2003
Agriculture	0.58	0.56	0.41	0.41
Industry	2.10	1.75	2.60	1.97
Services	1.76	1.78	1.98	1.50

Source: Calculations on the basis of data from ILO's Laborsta and the UN SNA database.

These divergent trends in the first and the second period show clearly in the movement of R-O/E ratio. Between 1986 and 1996, the R-O/Es in all three sectors move in the wrong direction. The 'relative surplusness' of labour in agriculture worsens significantly with the ratio declining from 0.56 to 0.41. On the other hand, the 'relative scarceness' of labour worsens in both industry and services with their respective ratios increasing from 1.75 to 2.6 and from 1.78 to 1.98. In other words in the first period there is absolutely no redeeming feature in the nature of structural change in output and employment.

In the second period however there is different story to tell. The increase in the 'relative surplusness' of labour in agriculture is arrested and the 'relative scarceness' of labour in both industry and services declines as labour absorption in both improves.

To round off this story of structural change, we need to look at what is happening to output per unit labour across the three sectors. In the Bangladesh economy like its counterparts in south-east Asia, industry is the productive, followed by services and then by agriculture. This is true for most years except 1986, when the output per unit labour in industry falls marginally below that of services.

	1981	1986	1996	2003
Total	800	686	745	1293
Agriculture	466	387	303	525
Industry	1682	1197	1939	2513
Services	1406	1219	1473	1929

Source: Calculations on the basis of data from ILO's Laborsta and the UN SNA database.

Given this ranking, therefore in the first period the Bangladesh economy sees a structural regression as employment switches from higher sectors to a lower output per unit labour sector and undoubtedly would have detracted from per capita income growth rather than aided it. The matter is worsened by the fact that there is sharp slowdown in the relative growth of output per unit labour – the ratio of output per unit labour in agriculture to that in industry declines from 0.32 in 1986 to 0.16 in 1996.

Thereafter in the second period structural change would have clearly aided productivity growth as the decline in employment share in agriculture was significantly higher than its decline in output share and the improved labour absorption in economy in the higher productivity sectors resulted in lowering of relative scarcities of labour. It is also worth pointing out that in this it is distinctly different from the Indian experience in both periods where decline in output share of agriculture is greater than the decline in the employment share. There is also some recovery in the relative growth of output per unit labour in agriculture – it grows significantly faster than the first period and as a result the ratio agriculture’s output per unit labour to that in industry increases from 0.16 in 1996 to 0.21 in 2006.

We had noted earlier, similar to India, output growth is driven largely by the service sector in Bangladesh as well. And in both services now account for more than 50% of output. There is however one important difference between Bangladesh and India on this score. In India the service sector is the most productive sector whereas in Bangladesh it is not. The problem however is that the service sector does not absorb sufficient labour.

To sum up this discussion on structural change in output and employment change, the following points emerge: First, Bangladesh undergoes a structural retrogression in the first period, with labour switching to the sector (agriculture) with lowest output per unit labour. In addition, there was sharp slowdown in the relative growth of agriculture’s output per unit labour in the first period. Second, these two taken together could at least partially explain the increase in \$1-a-day poverty ratios between 1985 and 2000. Third, in the following period structural change happens in a way that aids per capita income growth. Labour absorption in higher output per unit labour sectors improves in the economy and the decline in employment share in agriculture is significantly greater than its decline in output share. Fourth, despite this, Bangladesh’s problem is that it is saddled with agriculture accounting for very high proportion of the employed workforce. In 2003, agriculture accounted for more than 50% of the employed workforce. And agriculture is characterised by high levels of relatively surplus labour, made worse by the structural retrogression of the first period. Finally, the service sector is an important driver of growth for both Bangladesh and India. But in India, unlike in Bangladesh, the service sector is the most productive sector.

#### Gender and labour use patterns

Table 8: Bangladesh: Labour force growth rates		
	1985/86-95/96	1995/96-2003
Overall Labour Force (LF)	10.0	-1.1
Female LF	89.8	-6.3

Male LF	2.1	2.0
Source: Calculations on the basis of data from ILO's Laborsta database		

Labour force growth rates mimic the evolution of employment patterns with a slightly higher degree of exaggeration. As in, in the first period (1985/86-95/96), when employment growth expanded very rapidly (see Table 2), the LF expanded even faster growing at about 10% p.a. (see table 8) as opposed to 8% for the employed workforce. This is largely due to the fact that female LF grew faster than female employment. The male LF actually grew at somewhat below the growth rate of male employment. Similarly in the second period when employment growth contracted, the contraction in the female LF was greater than in the female employed workforce. On the other hand the growth in male LF was greater than that of the male employed workforce even as the latter decelerated in the second period.

	PR	PR Female	PR Male
1984/85	0.27	0.05	0.49
1985/86	0.28	0.05	0.49
1989	0.43	0.37	0.49
1995/96	0.41	0.32	0.50
1999/2000	0.42	0.33	0.50
2003	0.35	0.16	0.53
Source: Calculations on the basis of data from ILO's Laborsta database			

In Bangladesh PR increases 0.27 to 0.43 and then declines to 0.35. In the increase is largely in the first period when there is retrogression in structural change. The increase and the decrease is largely due first to an increase FPR that rises from 0.05 to 0.37 and then its decline to 0.16. MPR shows a much slowly but secularly (see Table 9).

	Employed/LF
1981	1.11
1983/84	1.12
1984/85	1.12
1985/86	1.10
1989	1.08
1995/96	1.08
2003	0.99
Source: Calculations on the basis of data from ILO's Laborsta database	

	Female employment growth (1)	Male employment growth (2)	Total employment growth	(2)/(1)
1981-1983/84	41.8	6.3	8.3	0.15
1983/84-1984/85	4.9	1.8	3.6	0.37
1984/85-1985/86	22.3	3.8	4.8	0.17

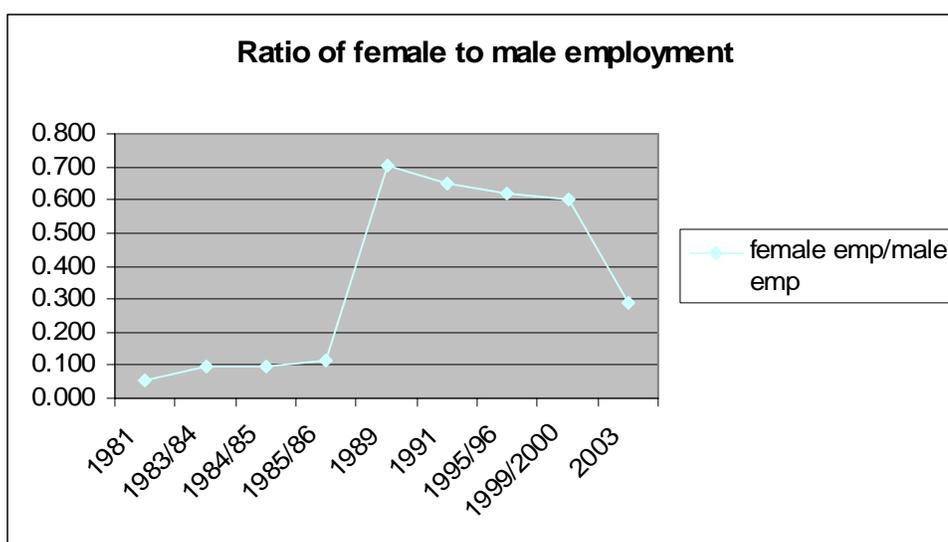
1985/86-1989	226.5	2.8	24.9	0.01
1989-1991	-2.5	1.8	0.0	-0.71
1991-1995/96	1.3	2.4	2.0	1.93
1995/96-1999/2000	-1.7	-1.0	-1.3	0.60
1999/2000-2003	-13.3	3.2	-3.0	-0.24

Source: Calculations on the basis of data from ILO's Laborsta database

Female employment mimics FPR. It shows much higher rates of growth when employment is expanding and is consistently higher than male employment in that period. But when employment decelerates, female employment sees fairly sharp contractions and is normally is lower than the male employment growth. The last column in Table 11 brings this out quite effectively.

Table 12: Bangladesh: Female-Male employment ratio	
	FEMP/MEMP
1981	0.053
1983/84	0.094
1984/85	0.096
1985/86	0.114
1989	0.706
1991	0.648
1995/96	0.617
1999/2000	0.599
2003	0.288

Source: Calculations on the basis of data from ILO's Laborsta database



As a result of this FEMP/MEMP ratio first rises quite sharply and then falls equally as is made clear in Table 12 and the associated graph.

Table 13: Bangladesh: Structural change in female employment				
	1981	1985/86	1995/96	2003

Agriculture	58.8	11.4	63.2	58.6
Industry	11.0	35.8	9.6	18.4
Services	24.2	15.9	25.0	23.0
Source: Calculations on the basis of data from ILO's Laborsta database				

	1981	1985/86	1995/96	2003
Agriculture	58.9	62.3	54.4	49.8
Industry	11.0	9.8	10.8	12.3
Services	24.1	27.6	33.7	37.9
Source: Calculations on the basis of data from ILO's Laborsta database				

	Share of Female Employment in Agriculture	Share of Male Employment in Agriculture
1981	58.8	58.9
1989	71.5	60.4
1991	84.9	54.4
1995/96	77.5	54.4
1999/2000	76.9	53.3
2003	55.8	47.7
Source: Calculations on the basis of data from ILO's Laborsta database		

There is a huge degree of fluctuation in female employment data, but it would appear that there is a gender dimension to the increase in agriculture's share in employment that place in the first period. In other words whereas agriculture's share in both female and male employment rises, the rise for females is much sharper than for males. It peaks in 1991 when 85% of female employment was deployed in agriculture after which it declines to 56% by 2003. For males it peaks earlier and at lower levels (62%) and then declines to 47% by 2003.

In other words, in the phase when there was sharp increase in FPR and female employment growth rates, an overwhelming proportion of women entering employment were working in agriculture.

To conclude, structural retrogression in the first period when agriculture's share in output declined while that in employment increased would have clearly detracted from per capita income growth during this period. The period therefore saw a significant increase in the 'relative surplusness' of labour and a sharp slowdown in the relative growth of output per unit labour. Second, even though the pace of structural change in the second period accelerates in the second period, its impact on per capita income growth is limited because the services sector, that has a lower output per unit labour than industry, is the main driver of output and employment growth. Third, the female labour force again

seems to function as a stabiliser in response to labour market movements. And finally, there seems to have been a clear gender dimension to the increase in the agriculture's share in employment during the first period, with an increasing proportion of female employment being accounted for by agriculture, even as FRP and female employment growth rose sharply.

## Philippines

Philippines had a 2006 per capita income of \$1420 and like India and Bangladesh did not see a deceleration in growth rates in the period 1996-2006.

Table 1: Philippines: Income growth rates		
	1986-96	1996-2006
GDP	3.1	4.1
GDP per capita	0.8	2.2
Source: World Bank: Philippines at a Glance		

Table 2: Philippines: Employment growth rates		
	1986-96	1996-2006
Total employment	2.78	2.39
Female employment	2.71	2.79
Male employment	2.82	2.17
Source: Calculations on the basis of data from ILO's Laborsta database		

The second period sees a deceleration in employment growth. This is largely due to deceleration in male employment. Female employment over the two period stays steady, in fact increases marginally. Female employment therefore grows faster than male in the second period (1996-2006), reversing the pattern of the earlier period.

Table 3: Philippines: Headcount Poverty Ratios		
	\$1	\$2
1985	23	62
1988	19	57
1991	20	56
1994	18	53
1997	14	44
2000	14	45
2003	14	44
Source: World Bank, Povcal Net		

Income growth has not been able to tackle the problem of persistent poverty, even though its record in this is better than that of both India and Bangladesh.

### Structural change in output and employment

Table 4: Philippines: Output Structural Change		
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	1986	1996	2006
Agriculture	23.9	20.6	14.2
Industry	34.6	32.1	31.6
of which Manufacturing	24.6	22.8	22.9
Services	41.5	47.3	54.2

Source: World Bank: Philippines at a Glance

The share of services in output increases by 5.8 and 6.9% in the first and second period respectively. In both periods this happens at the expense of industry and services. In the second period however the decline in industry share is very marginal and the increase in services is almost entirely due to the decline in agriculture's output share. Output growth therefore is driven by service sector in both periods.

	1986	1996	2006
Agriculture	49.8	48.4	36.7
Industry	13.4	19.1	14.8
Services	36.8	32.5	48.6

Source: Calculations on the basis of data from ILO's Laborsta database

Employment growth however was driven by industry in the first period and services in the second. The share of industry in employment increases by 5.7%, at the expense of both agriculture (a decline of 1.3%) and services (a decline of 4.4%) in the first period.

In the second period, the pace of structural change quickens with agriculture's share output declining by 6% and that in employment declining by nearly 12%. The share of industry in both declines as well, particularly sharply in employment. The share of services in output increases by 7% and that of employment by 16%.

	1986	1996	2006
Agriculture	0.48	0.43	0.39
Industry	2.59	1.68	2.14
Services	1.13	1.46	1.12

Source: Calculations on the basis of data from ILO's Laborsta database and World Bank

The slowness of structural change has meant that agriculture still remains an important contributor to employment and the 'relative surplusness' of labour in that sector has increased steadily over the two periods – from 0.48 in 1986 to 0.39 in 2006 (see Table 6). Services have emerged as the largest employer in the economy and mis-matched structural change has meant that there is no clear direction in the movement of 'relative scarceness' of labour in either industry or services.

	1986	1996	2006
Total	1429	4784	3543
Agriculture	686	2034	1373

Industry	3696	8057	7587
Services	1610	6965	3953
Source: Calculations on the basis of data from ILO's Laborsta and World Bank			

Despite increasing relative surplusness of labour in agriculture, the relative growth of output per unit labour saw an improvement in the first period – the ratio of agriculture's output per unit labour to industry's increased from 0.18 to 0.25. Similarly service sector saw its ratio increase from 0.43 to 0.86. In the second period all three sector saw significant declines in nominal output per unit labour. This is particularly worrisome in services, which has emerged as the largest employer in the economy, but has also seen has seen the sharpest decline in output per unit labour (see Table 7).

To sum, first, therefore neither in the first nor in the second period has structural change aided the process of per capita income growth. In the first period, slow pace of structural change meant labour was stuck in low output per unit labour agriculture alongside increasing relative surplusness of labour. Second, in the second period, employment from agriculture and industry switched to services which has an output per unit labour that much lower than that of industry. Finally, given the continuing importance of agriculture in employment, the increase of 'relative surplusness' of labour in that sector would have important implication for poverty alleviation.

#### Gender and labour use patterns

	1986-96	1996-2004
Overall Labour Force (LF)	2.92	2.29
Female LF	2.83	2.53
Male LF	2.97	2.16
Source: Calculations on the basis of data from ILO's Laborsta database		

LF growth rate decelerates in the second period (see Table 8) , due to a deceleration in both FLF and MLF growth rates. But MLF decelerates significantly faster and as a result, FLF grows faster than MLF in the second period.

	PR	PR Female	PR Male
1985	63.9	47.9	80.3
1987	65.7	48.3	83.3
1992	65	47.8	82.6
1995	65.6	49	82.1
1998	66	49.3	82.9
2000	64.3	48.4	80.3
2001	67.5	52.8	82.3
2002	66.2	51.7	80.8
2003	67.1	51.1	83.3
2004	66.5	50.2	82.9
2005	64.8	49.8	79.8

2006	64	48.8	79.1
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As a result labour force PR fluctuates a bit but shows a trend increase from around 0.64 in 1985 to 0.675 in 2001 after which to 0.64 by 2006 (see Table 9). FPR has a similar trajectory. MPR on the other hand which increases 0.83 in 1987 from 0.80, then fluctuates between these two values until 2003, after which it declines to 0.79 by 2006.

	Employed/LF
1985	0.94
1987	0.91
1992	0.91
1995	0.92
1998	0.90
2000	0.87
2003	0.90
2004	0.90
2005	0.89
2006	0.93

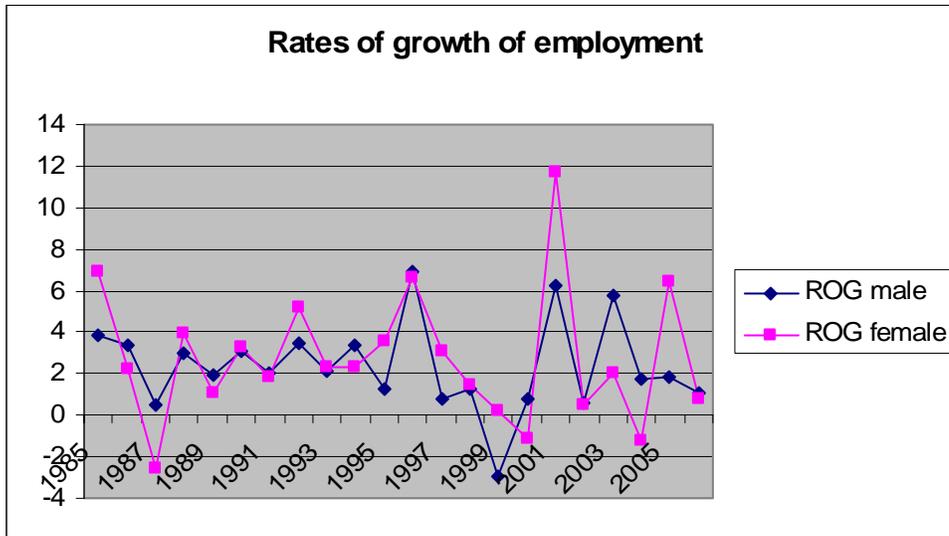
Given the fact that in the first period LF (2.92%) grew faster than employment growth (2.78%), the Employed/LF ratio saw a decline from 0.94 to 0.87 between 1985 and 2000. With the LF decelerating a little faster than employment growth in the second period – the former growing at 2.29% and the latter at 2.39% - the Employed/LF ratio saw some improvement as well (see Table 10).

	Female employment growth (1)	Male employment growth (2)	Total employment growth	(2)/(1)
1986	2.26	3.35	2.95	1.48
1987	-2.56	0.52	-0.63	-0.20
1988-89	2.53	2.49	2.51	0.98
1990-91	2.56	2.55	2.55	1.00
1992	5.19	3.45	4.08	0.66
1993-94	2.32	2.73	2.58	1.18
1995-96	5.07	4.09	4.45	0.81
1997-98	2.32	0.99	1.48	0.43
1999-2000	-0.43	-1.11	-0.86	2.57
2001-02	6.13	3.41	4.43	0.56
2003-04	2.59	1.80	2.08	0.69
2005-06	3.59	1.47	2.26	0.41

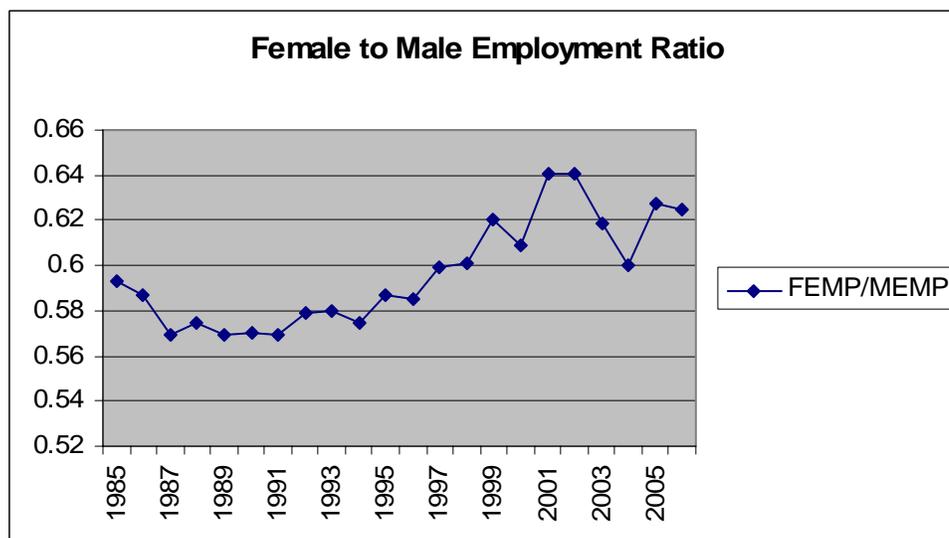
Source: Calculations on the basis of data from ILO's Laborsta database

During early part of the first period, which in Philippines had the relatively greater rate of employment, male employment rate of growth was consistently greater than or very close to female employment rates of growth (see last column in Table 11). However, towards

the end of the first period and for most of the second period (1996-2006) as employment growth decelerates, female employment rates of growth as consistently higher than male employment. It will be recalled that the FLF grew faster than the MLF during this period. The associated graph makes the same point.



As a result, the female to male employment ratio (FEMP/MEMP) sees a secular increase between 1991 and 2002, after which it declines for a couple of years and then declines again. It is worthwhile keeping in mind that most of the increase takes place when employment growth rates are decelerating. In addition, the rise in FEMP/MEMP ratio in Philippines makes it quite different from Malaysia, Thailand and Indonesia where this ratio has declined as employment growth rates have decelerated.



Available information therefore suggests that in Philippines the FLF does not act as a stabiliser in response to labour market movements.

Table 12: Philippines: Structural change in female employment			
	1986	1996	2006
Agriculture	35.1	30.3	24.5
Industry	12.6	12.5	11.1
Services	52.4	57.2	64.4
Source: Calculations on the basis of data from ILO's Laborsta database			

Table 13: Philippines: Structural change in male employment			
	1986	1996	2006
Agriculture	58.4	48.4	44.3
Industry	13.9	19.1	17.0
Services	27.7	32.5	38.7
Source: Calculations on the basis of data from ILO's Laborsta database			

Finally as Tables 12 and 13 suggest, female and male employment have distinct patterns. Agriculture's share in female employment is much smaller than in male and the share of services in female employment is much greater than in males. Therefore women are more like to be in services than men and men are more like to be in agriculture than women. In addition, even though the share of industry is small in both, it is declining for females whereas it is increasing for males.

These distinct patterns do not seem to have altered too much in the process of structural change, unlike in Malaysia. Given the fact that in the second period structural change in output and employment was driven by services, it would explain why female employment growth rate was higher than the male in that period.

To conclude, in Philippines a slow pace of structural change has resulted in agriculture still accounting for a substantial proportion of employment, and this alongside an increasing 'relative surplusness' of labour. Second, in the second period, given that structural change in output and employment is driven by services, it constrains per capita income growth because the service sector has significantly lower output per unit labour than industry and industry switches from industry to services. Third, unlike in Malaysia, Thailand and Indonesia, the FLF does not seem act as a stabiliser in response to labour market movements. Fourth, given that males are more likely to be employed in agriculture than female, the 'relative surplusness' of labour in that sector affects then much more than females. Fifth, given that females are much more likely to be employed in services than in agriculture, they have disproportionately gained from service sector led output and employment growth. But finally, it also important to remember that services have a much lower output per unit labour than industry, and therefore the increased employment of women in services comes at the cost of being stuck in a low income and low income growth segment.

### III. Latin America

#### IIIA. High per capita income growth economy

##### Chile

In 2006 Chile had a per capita \$6980. Like the other two high income growth economies, it too saw a substantial deceleration in per capita income growth rates in the second period (1996-2005) after a very rapid expansion in the first (see Table 1).

Table 1: Chile: Income growth rates		
	1986-96	1996-2006
GDP	8	3.6
GDP per capita	6.1	2.4
Source: World Bank: Chile at a Glance		

Economic slowdown in the second period meant that there was a deceleration in employment growth as well (see Table 2). The deceleration affected both female and male employment, but it is worth noting that in both periods female employment has grown faster than male.

Table 2: Chile: Employment growth rates		
	1986-96	1996-2006
Total employment	3.29	2.27
Female employment	4.03	2.97
Male employment	2.97	1.80
Source: Calculations on the basis of data from ILO's Laborsta database		

Sustained growth in Chile has meant that \$1-a-day poverty has been wiped out and \$2-a-day poverty is in single digit levels (see Table 3).

Table 3: Chile: Headcount Poverty Ratios		
	\$1	\$2
1987	6	24
1990	2	14
1992	1	12
1996	0	8
1998		8
2000		6
2003		6
Source: World Bank, Povcal Net		

#### Structural change in output and employment

In both the first and the second period, output growth was driven by industry and supported by manufacturing. As in Thailand, another of the high income growth economies in our sample, as a result of rapid industrial growth, the share of services in output decline right through our two periods (see Table 4).. The share of industry

increases secularly and that of agriculture declines. In the high growth phase industry's share in output increases by 3.2% as a result of a decline of 3% in agriculture and 0.3% in services. The low growth period sees a much faster change in output shares, with industry shares increasing by 6.6% as a result of a decrease in services share of 6% and of 0.5% in agriculture.

	1986	1996	2005
Agriculture	9	6	5.5
Industry	37	40.2	46.8
of which Manufacturing	18.7	19.4	17.6
Services	54	53.7	47.7

Source: World Bank: Chile at a Glance

As with other high income growth economies, structural change in employment is greater than that in output. However in services the decline in share in employment is a miniscule 0.3% and therefore the increase of 5.4% in the share of industry is largely the result a decline of 5.2% in agriculture's share in employment (see Table 5). Structural change in employment in the second period has a very different character with the share of industry declining and that of services rising. In the second period therefore service's in employment increases by 5.9% as a result of a decline in agriculture's and industry's share by 2.3% and 3.6% respectively.

	1986	1996	2005
Agriculture	20.6	15.4	13.2
Industry	21.2	26.6	23.0
Services	58.2	58.0	63.9

Source: Calculations on the basis of data from ILO's Laborsta database

In the high growth phase then increase in the employment share of industry (5.4%) was greater than the increase in its output share (3.2%), leading to acceleration in the process of structural change. As a result, because of improved labour absorption by industry, the 'relative scarceness' of labour in industry declined – the R-O/E declining from 1.75 to 1.5 (see Table 6). The R-O/E for services did not change. Despite vastly improved labour absorption by industry, Chilean agriculture, which suffers from fairly high levels of relatively surplus labour, saw a small increase in the 'relative surplusness' of labour. But given agriculture's relatively small and declining share in employment, it was counterbalanced by the fact that industry's share in employment was rising alongside a significant decline in 'relative scarceness' of labour in that sector.

In the second period, or low growth there is a complete mis-match between output and employment change. As we have already seen, industry's share in output increases by 6.6% as a result of declines in the shares of agriculture and services. Again as we have noted, on the employment side however, it is services' share that increases by 5.9% as a result of declines in shares of agriculture and industry. Mis-matched structural change

leads to deterioration in labour absorption – the ‘relative scarceness’ of labour in industry increases sharply as does the ‘relative surplusness’ of labour in services (see Table 6)

	1986	1996	2005
Agriculture	0.44	0.39	0.42
Industry	1.75	1.51	2.04
Services	0.93	0.93	0.75

Source: Calculations on the basis of data from ILO’s Laborsta database, World Bank and UN SNA

Table 7 makes clear as to why the nature of structural change helped per capita income growth in the high growth phase and constrained it in the low growth phase. Industry has significantly higher output per unit labour than either agriculture or services. Therefore switching labour use from agriculture to industry would have aided per capita income growth.

In addition both in services and agriculture, output per unit labour saw fairly rapid growth in the high growth phase. The ratio of agriculture’s output per unit labour to industry increases only marginally between 1986 and 1996 – from 0.25 to 0.26. But then industry itself sees phenomenal increases in output per unit labour – between 1986 and 1996 it increases a whopping 2.7 times. Similarly services saw its ratio of output per unit labour to that of industry’s increase from 0.18 to 0.22. Therefore in the first period per capita incomes growth is aided by re-allocation of labour to high output per unit labour industry and the relatively high growth of output per unit labour in both agriculture and services.

In the low growth phase, effectively, this process reversed itself. Services is the sector with the lowest output per unit labour in Chile and therefore a shift of labour from agriculture and industry to services would have certainly constrained per capita income growth. In addition as we have seen, the nature of labour absorption in the services sector, which at 64% of employment in 2005 is the largest employer in the economy, has meant that ‘relative surplusness’ of labour has seen a significant increase in the second period. The largest employer in the economy with the lowest output per unit labour and characterised by an increasing ‘relative surplusness’ of labour. Hardly the recipe for a rapid growth in per capita incomes. To add to the misery, whereas output per unit labour continues to rise industry, there is a significant slowdown in relative growth rates of output per unit labour in agriculture and services – agriculture’s ratio relative to industry declines from 0.26 to 0.20 between 1996 and 2006; services’ ratio declines from 0.22 to 0.13 – contributing to the slowdown in per capita income.

	1986	1996	2005
Total	4543	14305	20135
Agriculture	1987	5571	8415
Industry	7933	21628	41054
Services	1460	4785	5547

Source: Calculations on the basis of data from ILO’s Laborsta and the UN SNA database.

To sum up, first, structural change in output and employment in the high growth phase is broadly matched and also driven by industry, the sector with the highest output per unit labour in the economy. As a result structural change contributes to per capita income growth and its pace, to the easing of relative scarceness of labour in industry. Per capita income growth is also aided by the relatively high growth of output per unit labour in both agriculture and services. Second, this process reverses itself in the low growth phase as output continues to be driven by industry but employment growth switches to services, the sector with the lowest output per unit labour, hindering per capita income growth. In addition, there is a sharp deceleration in the growth of output per unit labour in both agriculture and services. Third, the pattern of labour absorption in the economy is such that the service sector, which accounts for the largest proportion of the employed workforce, now suffers from significant levels of ‘relative surplusness’ of labour. Therefore, fourth, now both agriculture and services are characterised by ‘relative surplusness’ of labour. Even though levels of relatively surplus labour in services are not as high as that in agriculture they are not insignificant either.

#### Gender and labour use patterns

	1986-96	1996-2005
Overall Labour Force (LF)	2.53	1.89
Female LF	3.23	2.86
Male LF	2.22	1.40

Source: Calculations on the basis of data from ILO's Laborsta database

The LF growth rate in Chile decelerated as between the high and low growth phases and the deceleration affected growth of both FLF and MLF (see Table 8). It is worth keeping in mind that the employment growth rate, both overall and across gender, was higher than LF growth, both overall and across gender.

	PR	PR Female (FPR)	PR Male (MPR)
1986	35.1	20.6	50.2
1989	36.8	22.2	52
1993	38.6	24.6	53.3
1995	37.8	24	52.1
1997	38.7	25.2	52.4
1999	39.3	26.3	52.5
2001	38.4	25.4	51.8
2003	38.7	26.3	51.3
2004	39.7	28	51.6
2005	39.2	27.6	50.9

Source: Calculations on the basis of data from ILO's Laborsta database

Despite rapid per capita income growth in the first period, PR ratios did not increase significantly (see Table 9). Between 1986 and 1999 it increased from 0.35 to 0.39. After which the PR fluctuated around 0.39 until 2005. The increase in PR itself is the result of increase the FPR which rises from 0.21 in 1986 to 0.26 in 1999. Over the same period MPR increases by about 2% points. However by the end of the period it has declined to end up almost where it began whereas the FPR continues to rise to about 0.28. It should however be kept in mind that the MPR is almost twice that of FPR and therefore the higher rates of growth in many ways reflect the low base.

	Employed/LF
1986	0.91
1989	0.95
1993	0.96
1995	0.95
1999	0.91
2001	0.92
2003	0.93
2004	0.92
2005	0.93

Source: Calculations on the basis of data from ILO's Laborsta database

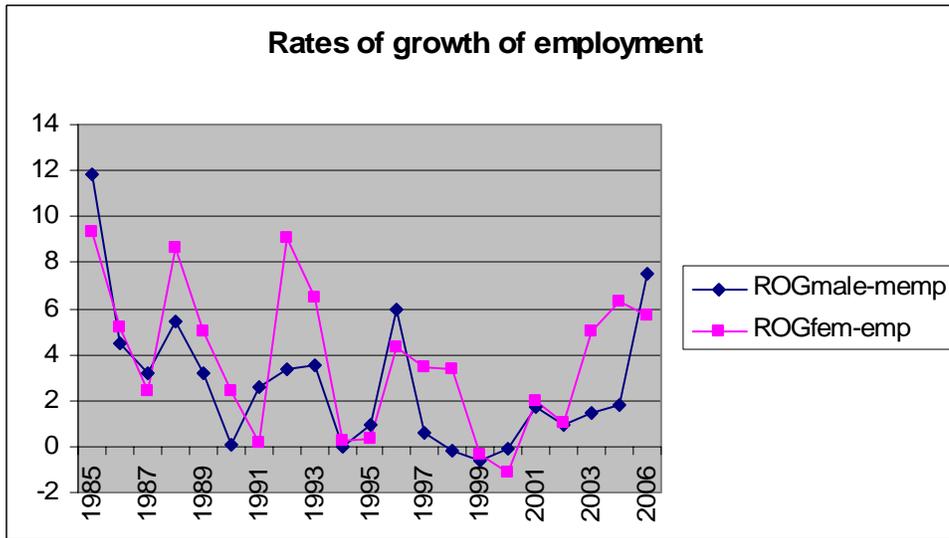
The fact that the rate of growth of employment is faster than the labour force reflects in an improvement in the Employed/LF ratio which increases to 0.95 from 0.91 (see Table 10) though the faster deceleration of employment vis-à-vis in the low growth period, leads to that ratio declining to 0.93.

	Female employment growth (1)	Male employment growth (2)	Total employment growth	(2)/(1)
1986-89	5.35	3.92	4.35	0.73
1989-91	1.29	1.31	1.30	1.01
1991-93	7.80	3.44	4.79	0.44
1993-95	0.29	0.46	0.40	1.61
1995-98	3.73	2.13	2.65	0.57
1998-2000	-0.74	-0.34	-0.47	0.45
2000-02	1.49	1.33	1.38	0.90
2002-06	5.66	2.84	3.80	0.50

Source: Calculations on the basis of data from ILO's Laborsta database

As Table 11 and the associated graph make clear, the fact that the rate of growth of employment in the high growth period is higher than the low growth period is more an outcome of statistical averaging rather than a faithful representation of an underlying trend. What is perhaps more accurate is that during the high growth phase itself there was significant deceleration in employment where it bottomed out around 1999-2000. After

this there was an upturn in employment growth rates, which however did not achieve the peaks reached in the early part of the high growth phase.



Equally importantly what the graph also tells us (as does the last column of Table 11) that for the most part, the rate of growth of female employment is greater than that of male employment both in the upturn and the downturn. As a result, as the graph below indicates we get a steady increase in the FEMP/MEMP ratio which rises from 0.42 in 1985 to 0.54 in 2006. In this context it is important to bear in mind that employment growth rates have been higher than LF growth rates for both females and males. It is also worth pointing out that the increase in the FEMP/MEMP ratio in Chile is different from a similar increase in the ratio in Philippines. In Philippines it was much more an outcome asymmetric response to labour market movements where males rates of employment growth tended to higher than female in an upturn and female rates of employment growth tend to higher than male in a downturn.

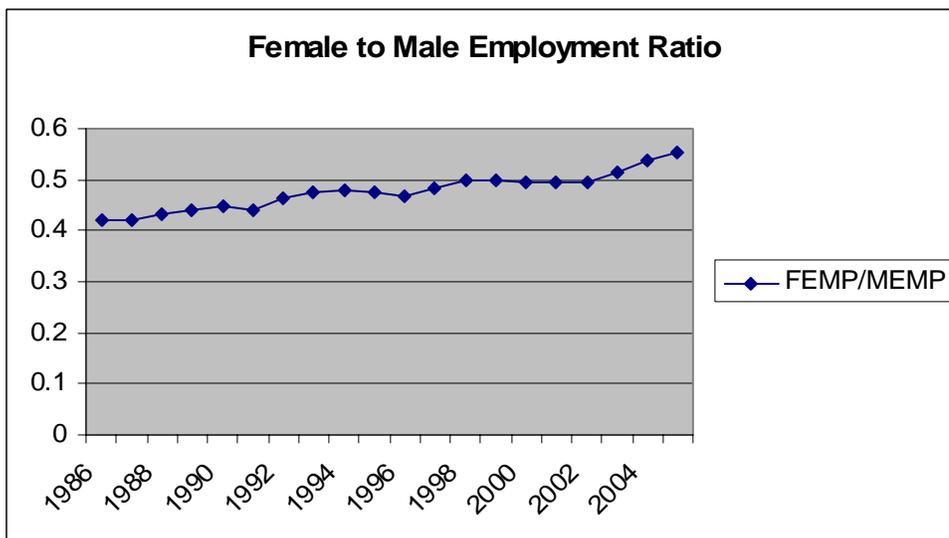


Table 12: Chile: Structural change in female employment			
	1986	1996	2006
Agriculture	4.5	5.3	5.8
Industry	12.6	14.9	11.3
Services	82.8	79.8	82.9
Source: Calculations on the basis of data from ILO's Laborsta database			

Table 13: Chile: Structural change in male employment			
	1986	1996	2006
Agriculture	27.4	20.2	16.7
Industry	24.8	32.1	29.9
Services	47.8	47.8	53.4
Source: Calculations on the basis of data from ILO's Laborsta database			

As Table 12 and 13 suggest, in Chile as well there is a clear gender divide in occupations. Much more than in Philippines, women are under-represented in agriculture and over-represented in services. Women are also under-represented in industry. However it is important to note that the process of structural change did not have a gender dimension, at least for the time period we have studied. For example, when the share of industry in employment increases in the high growth phase, there is an increase in the share of industry for both female and male employment. And when it decreases in the low growth phase, it affects both. But the gendered pattern of occupation structure of course meant that males gained more from employment growth in the high growth phase given that it was driven by industry and women gained more in the low growth phase when employment was service sector driven. Of course given the huge differences in output per unit labour between industry and services, there is also an earnings dimension to this asymmetry with women being under-represented in the sector with the highest output per unit labour and over-represented in the sector with the lowest.

To conclude, first, in the high growth phase with output and employment growth driven by industry, the sector with the highest output per unit labour, and the change in output and employment moving roughly in tandem, structural change contributed to per capita income growth. In addition both agriculture and services had relatively high rates of growth of output per unit labour, thereby aiding the per capita income growth. Second, given the mis-match in output and employment change in the low growth period - with output growth being led industry and employment growth by services - structural change resulted in relative inefficiency of labour use and would have constrained per capita income growth. Third, perhaps more importantly, services have the lowest output per unit labour of the three sectors and therefore in effect labour switches from highest output per unit labour sector to the lowest. Fourth, there is a clear gender dimension to labour use – females have a very high likelihood of being in services and males in agriculture and industry. Given that industry has an output per unit labour that is so much higher than other two sectors, female are under-represented in the sector with the highest output per unit labour and over-represented in the sector with lowest. Equally importantly that sector is characterised by significant levels of relatively surplus labour. Finally, males however

have to bear the brunt of much higher levels of ‘relative surplusness’ of labour in agriculture where they are over-represented.

### IIIB. Low per capita income growth economies

#### Brazil

Brazil had a 2006 per capita income of \$4,730 and unlike Chile has undergone two decades of economic stagnation. Indeed it has the lowest rates of economic growth among our nine country sample. There was no per capita income growth in the decade 1986-96 and the following decade was only slightly better with growth of 1% p.a. (see Table 1).

Table 1: Brazil: Income growth rates		
	1986-96	1996-2006
GDP	1.6	2.4
GDP per capita	0	1
Source: World Bank: Brazil at a Glance		

Employment growth is slightly higher in the second period than in the first and both periods female employment grows faster than male. This holds despite the fact that male employment grows slightly faster in the second period than in the first and female employment decelerates in the second (see Table 2).

Table 2: Brazil: Employment growth rates		
	1986-96	1996-2006
Total employment	2.10	2.28
Female employment	3.40	2.89
Male employment	1.41	1.86
Source: Calculations on the basis of data from ILO’s Laborsta database		

For an economy at its level of per capita income, poverty still remains an issue. It has not been able to eliminate \$1-a-day poverty and the proportion of the population below the \$2-a-day poverty line remains significant (see Table 3)

Table 3: Brazil: Headcount Poverty Ratios		
	\$1	\$2
1981	12	31
1985	16	36
1989	9	25
1990	14	32
1993	8	23
1995	10.5	23
1998	1	16
2001	8	22
2004	8	20

### Structural change in output and employment

In the first period when there was no growth in per capita incomes, was a period of de-industrialisation for Brazil. Output growth was services driven, with a dramatic decline of 19% in the share of industry in output. The manufacturing sector shrank by almost 50%. The share of services in output increased nearly 25% as a result of the 19% decline in industry and 6% decline in agriculture (see Table 4)

In the second period there was a bit of a reversal and output growth was industry driven. The share of industry in output increased by 5%, as result of a decline of 4.5% in the share of services output and 0.4% in that of agriculture.

	1986	1996	2006
Agriculture	11.2	5.5	5.1
Industry	45.2	26	30.9
of which Manufacturing	33	16.8	18.4
Services	43.7	68.5	64

Source: World Bank: Brazil at a Glance

In the first period, given the scale of output adjustment, adjustment in labour was much smaller. The service sector's employment share increased by nearly 6% on the back of declines in industry's share of around 4% and in agriculture's share by 1.5% (sees Table 5).

In the second period, there was a mis-match between output and employment change. Output growth as we have seen was driven by industry. Employment growth on the other hand was driven by service sector with a supporting role for industrial employment. Both the service sector's and industry's share in employment increased, by a little more than 3% and by 1.5% respectively, on the back of a decline in agriculture's share by 5%.

	1986	1996	2006
Agriculture	25.9	24.4	19.3
Industry	24.2	19.9	21.4
Services	50.0	55.7	59.1

Source: Calculations on the basis of data from ILO's Laborsta database

As a result of these changes, relative surplusness and scarceness of labour obviously changed. In the first period, the massive increase in the output share of the service meant that alongside a rather small increase in labour absorption meant that service sector went from being mildly relatively surplus in labour to being relatively labour scarce. Industry saw a significant decline in its relative scarceness of labour (see Table 6). But given that it happened because the decline in labour absorption on account of deindustrialisation was significantly smaller than the decline in output share, the decline in relative

scarceness of labour can hardly be a good thing. Finally agriculture saw a significant increase in the ‘relative surplusness’ of labour. Therefore structural change in both agriculture and industry moved in the wrong direction.

	1986	1996	2006
Agriculture	0.43	0.23	0.26
Industry	1.87	1.31	1.45
Services	0.87	1.23	1.08

Source: Calculations on the basis of data from ILO’s Laborsta database

In the second period patterns of labour absorption suffered because of mis-match between structural change in output (which was driven by industry) and structural change in employment (which was driven by services). As a result, relative scarceness of labour in industry worsened because of low levels of labour absorption in industry, given output change. On the other hand, relative scarceness of labour in services declined.

	1986	1996	2006
Total	4836	12363	11952
Agriculture	2095	2792	3154
Industry	9047	16153	17294
Services	3193	3726	3723

Source: Calculations on the basis of data from ILO’s Laborsta and the UN SNA database.

Given that the gap between industry’s output per unit labour and that of services and agriculture is very large and growing (see Table 7), the fact that structural change in employment was driven by the service sector could only have constrained per capita income growth. Particularly in the first period, when the gain in the service sector’s share of employment was almost entirely at the expense of industry, labour switched from a sector with a very high output per unit labour to a sector with a very low output per unit labour. Little wonder then that per capita income growth in the Brazilian economy stagnated in the first period. Similarly even though labour absorption in industry improves in the second period, given that the bulk of labour is absorbed by services, per capita income growth is constrained by the growth of output per unit of labour in the service sector which was stagnant even in nominal terms (see Table 7).

In other words, industry continues to have both the highest output per unit labour and better growth rates of output per unit labour, as compared to the other two. As a result the ratio of agriculture’s output per unit labour as compared to industry’s declines from 0.23 to 0.17 between 1986 and 1996. It improves marginally to 0.18 in 2006. For services the same ratio is seen a secular decline – from 0.35 in 1986 to 0.23 in 1996 and further to 0.21 in 2006. Therefore the services – the sector that accounts for the most employment in the economy (60% in 2006) - is a low output per unit labour sector with very low relative growth rates of output per unit labour.

To sum up, first, the first period is dominated by the de-industrialisation of the Brazilian economy and the fact that output and employment growth are service sector driven. Second, as a result employment switches from industry, whose output per unit labour is very high, to services with a much lower level of output per unit labour, and therefore structural change would have negatively affected per capita income growth. Third, services also has very low relative growth rates of output per unit labour, thereby further constraining per capita income growth. Fourth, the relative surplusness of labour in agriculture saw a significant increase. Fifth, in the second period, a mis-match between structural change in output and employment results in relative inefficiency of labour use and constrains per capita income growth. With output being industry driven but with low labour absorption and employment being services driven, the bulk of labour is absorbed into a low output per unit labour sector with very low relative growth rates. Sixth, with services accounting for more than 60% and agriculture for more than 19% of employment, very close to 80% of the employed workforce is stuck in low output per unit sectors with low relative growth rates.

#### Gender and labour use patterns

	1986-96	1996-2004
Overall Labour Force (LF)	3.45	3.17
Female LF	5.47	4.23
Male LF	2.35	2.43

Source: Calculations on the basis of data from ILO's Laborsta database

LF growth rate decelerated between the first and second period and this was true of the female LF as well. The male LF grew at roughly the same rate in both periods. However, the female LF grew faster than the male LF in both periods (see Table 8). In part the higher FLF growth rates reflect the much smaller base on which it is calculated. But the faster increase of FPR as compared with MPR in the first period suggests that the small base is only a part of the story.

	PR	PR Female (FPR)	PR Male (MPR)
1986	0.40	0.27	0.53
1988	0.41	0.28	0.54
1990	0.42	0.29	0.55
1992	0.45	0.35	0.56
1996	0.45	0.36	0.56
1997	0.46	0.37	0.56
1998	0.47	0.38	0.56

1999	0.48	0.39	0.57
2004	0.61	0.51	0.71
Source: Calculations on the basis of data from ILO's Laborsta database			

In the first period, during which per capita incomes stagnate, PR ratios increase rather slowly, rising from 0.4 in 1986 to 0.45 in 1996. The increase in PR is largely due to an FPR that increases by 0.13, going from 0.27 to 0.36 over that period. Over the same period, MPR increases much more slowly, rising by 0.03, from 0.53 to 0.56. Between 1996 and 2004 the increase in PR is very sharp going from 0.46 to 0.61. Both FPR – going from 0.36 to 0.51 - and MPR - from 0.56 to 0.71 – however see very similar increases. It is also worth noting that Brazil has the highest increase in PRs among the 9 countries in our sample.

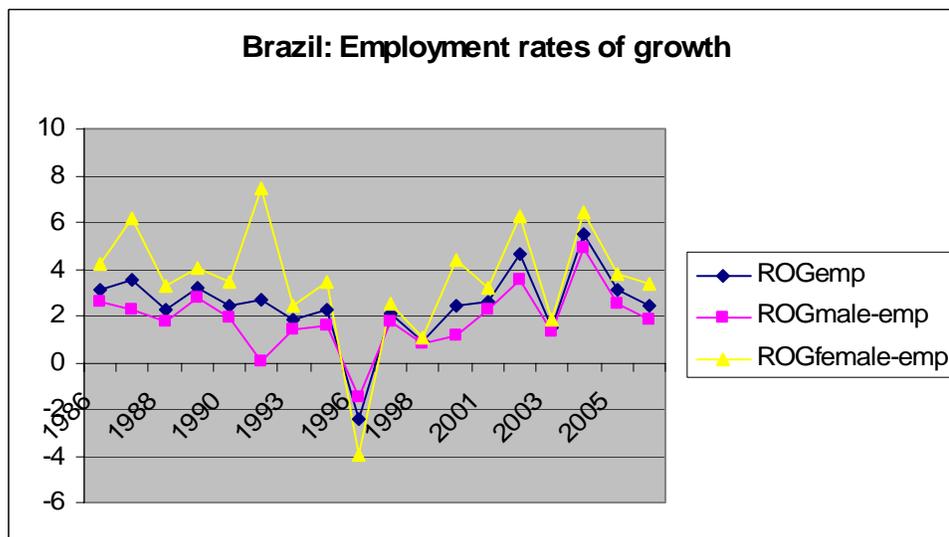
	Employed/LF
1986	1.03
1990	1.01
1992	0.99
1995	0.99
1996	0.97
1997	0.96
1998	0.94
1999	0.94
2004	0.93
Source: Calculations on the basis of data from ILO's Laborsta database	

The rapid increase in LF growth rates, particularly for women, in face of relatively stagnant employment growth rates (see Table 2), begins to show up in employment levels. As Table 10 makes clear, the Employed/LF ratio sees a steady decline from 1.03 in 1986 to 0.93 in 2004.

As Table 11 (see last column) and the associated graph make clear, in Brazil (as in Chile), the rate of growth of female employment is consistently higher than that of males. And this fact is true both in the case of deceleration in employment growth (first period) and the mild acceleration in employment growth (in the second period).

	Female employment growth (1)	Male employment growth (2)	Total employment growth	(2)/(1)
1986-88	4.75	1.99	2.93	0.420
1988-90	3.77	2.32	2.83	0.616
1990-92	7.44	0.01	2.65	0.002
1992-95	2.93	1.48	2.05	0.506
1995-96	-3.92	-1.48	-2.45	0.378
1996-97	2.54	1.78	2.08	0.701
1997-98	1.08	0.80	0.91	0.735
1998-99	4.39	1.18	2.45	0.270
1999-2004	4.42	3.00	3.58	0.680

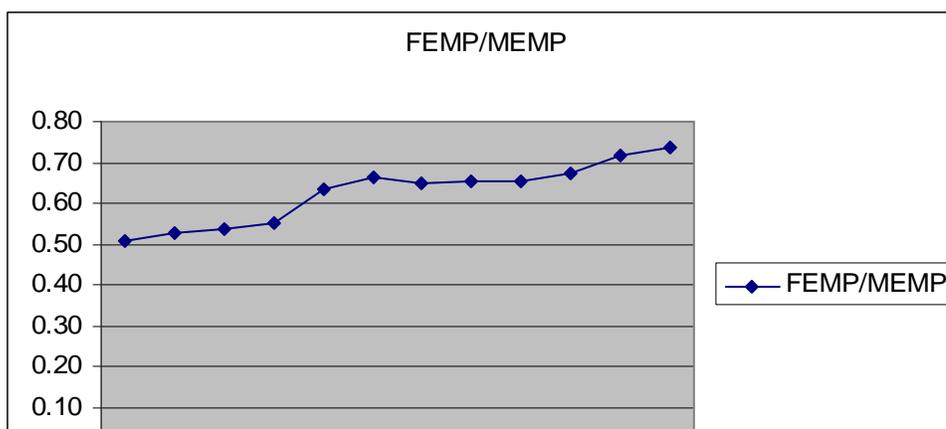
2004-06	3.56	2.17	2.75	0.609
Source: Calculations on the basis of data from ILO's Laborsta database				



As a result, Brazil (as in Chile) sees a secular increase in the FEMP/MEMP ratio (see Table 12 and the associated graph) over the two periods. It is useful to remind ourselves that the increase the FEMP/MEMP ratio in Chile and Brazil happens under very different growth contexts. In the Chile it has happened in the context of fairly rapid per capita income growth whereas in the Brazilian context it has happened in the context effectively of economic stagnation. We will return to this theme below.

	FEMP/MEMP
1986	0.51
1987	0.53
1988	0.54
1990	0.55
1992	0.63
1995	0.66
1996	0.65
1998	0.65
1999	0.67
2004	0.72
2006	0.74

Source: Calculations on the basis of data from ILO's Laborsta database



Again, as in Chile and Philippines before it, labour use patterns in Brazil are clearly gendered, though the gender division of labour is not as sharp as in Chile. But as Tables 13 and 14 make clear, females are under-represented in agriculture and industry and males in services. Labour absorption patterns that we have studied in the Brazilian economy would therefore have a differential effect across gender. Males would have been affected much more in the first period when there is a significant decline in labour absorption in industry. In addition, given the over-representation of males in agriculture, they would have borne the brunt of the sharp increase in the ‘relative surplusness’ of labour in that sector in the first period.

Relatively, in terms of employment, females gained much more because in both periods employment growth was driven by the service sector. But it should be emphasised that as compared with industry, the service sector has very low output per unit labour as well as low relative growth rates. De-industrialisation in industry and the growing ‘relative surplusness’ of labour in agriculture, both sectors where males are over-represented, might explain why MPR increased so much less than FPR in the first period. In the second period, with some improvement in labour absorption in industry, we also see a sharp increase in MPR.

Table 13: Brazil: Structural change in female employment				
	1981	1986	1996	2006
Agriculture	19.8	14.8	19.7	15.0
Industry	13.0	14.3	9.6	13.0
Services	67.3	70.9	70.7	71.9
Source: Calculations on the basis of data from ILO’s Laborsta database				
Note: 1980 is based on census data and the subsequent years on sample survey data.				

Table 14: Brazil: Structural change in male employment				
	1981	1986	1996	2006
Agriculture	33.6	31.5	27.4	22.5
Industry	30.0	29.2	26.6	27.5
Services	36.4	39.4	46.1	49.6
Source: Calculations on the basis of data from ILO’s Laborsta database				
Note: 1980 is based on census data and the subsequent years on sample survey data.				

To conclude, the nature of structural change in output and employment over the two decades under review would have constrained per capita income growth. In the first

period, as a result of de-industrialisation, labour switched from industry to services and therefore from a very high to a very low output per unit labour sector and with low relative rates of growth. Second, in the second period, a mis-match between structural change in output and employment reduced the benefits of improved labour absorption. Third, in both periods, services, which account for the bulk of employment in the economy, not only had low output per unit labour, but had low growth rates relative to industry. This again would have constrained per capita income growth. Fourth, Brazil saw fairly significant increases in the PRs for both females and males. Fifth, despite being somewhat less pronounced than in Chile, there is a very clear gender dimension to employment outcomes in Brazil – females are over-represented in service sector employment and males in agricultural and industrial. Sixth, as a result males would have disproportionately borne the brunt of adverse labour market adjustments – the sharp rise of the ‘relative surplusness’ of labour in agriculture and the decline in industry’s employment share in the first period. Finally, by the same token however, females lose from being under-represented in the sector with the highest output per unit labour.

## Mexico

With a 2006 per capita income \$7830, Mexico is the wealthiest economy in our sample of nine. Over the two decade period that we are studying however, its growth performance both in GDP and per capita income terms has been poor. Not quite as bad as Brazil’s but not significantly better either. Its economy grew roughly at the same pace over our two periods, with the GDP rate of growth marginally higher in the second than in the first (see Table 1).

Table 1: Mexico: Income growth rates		
	1986-96	1996-2006
GDP	2.8	3.1
GDP per capita	0.9	1.9
Source: World Bank: Mexico at a Glance		

Employment rates of growth however decelerated somewhat between the first and the second period. The deceleration affected both female and male employment. Like its other Latin American counterparts in this sample, in both periods female employment grew significantly faster than male (see Table 2).

Table 2: Mexico: Employment growth rates		
	1991-96	1996-2006
Total employment	2.59	2.37
Female employment	3.88	3.66
Male employment	1.90	1.71
Source: Calculations on the basis of data from ILO’s Laborsta database.		
Note: 1991 was the first year for which gender disaggregated employment data was available.		

Mexico has had a problem with persistent poverty. Even though the by \$1-a-day measure poverty has declined to the low single digits, it has not been as successful, if the \$2-a-day measure is used (see Table 3). \$2-a-day poverty levels are comparable with that of Brazil, but Mexico’s 2006 per capita income is at least 65% higher than Brazil’s.

	\$1	\$2
1984	14	40
1992	16	22
1995	8	26
1996	6	28
1998	9	28
2000	6	23
2004	2	13

Source: World Bank, Povcal Net

### Structural change in output and employment

Output growth in both the first and the second period are driven by service sector growth. As a result, in both periods, agriculture and industry (and within industry, manufacturing) have seen their shares in output decline.

Over our two periods, structural change has not been very rapid. In the first period (1988-96), agriculture's share in output declined by a little more than 2% and industry's by almost 4% and as result, service's sector's share increased by 6%. In the second period (1996-2006), the pace of structural change slowed down even more – the share of the service sector in output increased by 4% on the back of declines of a little more than 2% in agriculture and little less than 2% in industry (see Table 4).

	1988	1996	2006
Agriculture	8.64	6.3	3.9
Industry	32	28.4	26.7
of which Manufacturing	23.8	21.5	18
Services	59.4	65.4	69.4

Source: UN SNA

Similarly in employment structure as well, change has been slow. In the first period, share of services in employment increased by nearly 6% as a result of declines in industry and agriculture of 4 and 1.3% respectively. In the second period, industry along with services sees some increase in its employment share on the back of decline's in agriculture's. Therefore, a decline of nearly 8% in agriculture's employment share is shared out by services and industry with increases in their shares of 4.4 and 3.1% respectively (see Table 5). As a result of result of these changes, services now account for the bulk of employment in the economy – with its share increasing from 49% in 1988 to 59% in 2006.

	1988	1996	2006
Agriculture	23.5	22.2	14.3

Industry	26.5	22.7	25.8
Services	49.0	54.8	59.2
Source: Calculations on the basis of data from ILO's Laborsta database			

With increases in the shares of output and employment in the service sector roughly in balance in the first period – output share increases 6% and employment share by just under 6% - structural change was rather muted. As we have seen earlier, for rapid structural change one would require a proportionately larger response in terms of employment shares relative to change in output shares. Muted structural change meant small movements in the relative efficiency of labour use. This is reflected in the relatively small movements in the ratios of relative labour absorption (see Table 6). In the first period, the only thing worthy of note is that Mexican agriculture suffers from a very high degree of ‘relative surplusness’ of labour. And that in the first period the relative slowness of transferring labour away from agriculture meant that this ‘relative surplusness’ worsened appreciably (see Table 6).

In the second period, the pace of structural change accelerated somewhat, with an output share change of 4% as opposed to an employment share change of nearly 8% and labour absorption moved in a fashion that eased relative scarcities and did not worsen ‘relative surplusness’. Or to put it differently, structural change in the second period, resulted in some improvement in the relative efficiency of labour use (see Table 6). Therefore the two periods taken together suggest that structural change has meant some improvement in the relative efficiency of labour use in non-agriculture alongside significant deterioration in agriculture.

	1988	1996	2006
Agriculture	0.37	0.28	0.27
Industry	1.21	1.25	1.03
Services	1.21	1.19	1.17
Source: Calculations on the basis of data from ILO's Laborsta database and UN SNA			

Any improvements in relative efficiency of labour use however have been overshadowed by the fact that labour has switched to a low output per unit labour sector. Given that output and employment growth have been driven by the services, the shares of the service sector in both output and employment have increased consistently (see Table 4). Indeed, the services’ share in employment has risen from 59 to 69% between 1986 and 2006.

But as Table 7 makes clear, services have a very low output per unit labour, particularly relative to industry, which is the sector with the highest output per unit labour in the economy. Therefore it is also important to note that alongside the increase of the share of the service sector in employment, industry’s share fell in the first period. And even though it recovered somewhat in the second, in 2006 industry’s share was still below what it was in 1988 (see Table 5).

Perhaps equally importantly, not only is the gap between output per unit labour in services and industry very high, but it widens rather than narrows between 1988 and 2006. The ratio of output per unit labour in services and industry falls from 0.40 in 1988 to 0.31 in 1996 and further to 0.29 in 2006. Ultimately this is what constrains per capita income growth most – not only does the service sector have a very low output per unit labour, but it has also grown relatively very slowly and this sector now accounts the bulk of employment in the economy.

	1988	1996	2006
Total	6511	9800	19887
Agriculture	2392	2780	5425
Industry	7850	12243	20549
Services	3170	3846	6049

Source: Calculations on the basis of data from ILO's Laborsta and the UN SNA database.

To sum up, first, the pace of structural change in the Mexican economy has been rather muted particularly in the first period. But in the process, services, which was already the dominant sector in 1986, has increased its dominance, both in terms of output and employment. Second, there has also been some improvement in the relative efficiency of labour use. Third, but all this is overshadowed by the fact that services are also a sector that has a very low output per unit labour which has grown relatively very slowly. The fact of relatively slow growth in output per unit labour perhaps constrains per capita income growth more than anything else. Fourth, agriculture has seen a increase in the 'relative surplusness' of labour in the first period, starting from already fairly high levels.

#### Gender and labour use patterns

	1988-96	1996-2006
Overall Labour Force (LF)	3.28	2.14
Female LF	4.15	3.49
Male LF	2.88	1.44

Source: Calculations on the basis of data from ILO's Laborsta database

As with employment, LF growth too decelerated between the first and second period (see Table 8). LF however grew faster than employment in the first period and slower than employment in the second. The Female LF grew faster than male in both periods. It also grew faster than female employment in both periods. Male employment however grew faster than male LF in the second period.

	PR	PR Female (FPR)	PR Male (MPR)
1988	0.35	0.22	0.49
1991	0.36	0.22	0.51
1993	0.37	0.23	0.52
1995	0.38	0.24	0.53

1996	0.38	0.25	0.53
1997	0.40	0.26	0.54
2000	0.40	0.26	0.54
2002	0.40	0.27	0.54
2004	0.41	0.28	0.55
2006	0.41	0.29	0.54
Source: Calculations on the basis of data from ILO's Laborsta database			

Labour force PRs increased from slowly- by 0.06, rising from 0.35 in 1988 to 0.41 in 2006 (see Table 9). FPR increased by a little more – 0.07 – but from a very low base of 0.22. The higher rates of growth of the FLF probably reflect this low base effect. MPR increased by 0.05 but given the low FPR, males would have accounted for the bulk of the increase in the LF.

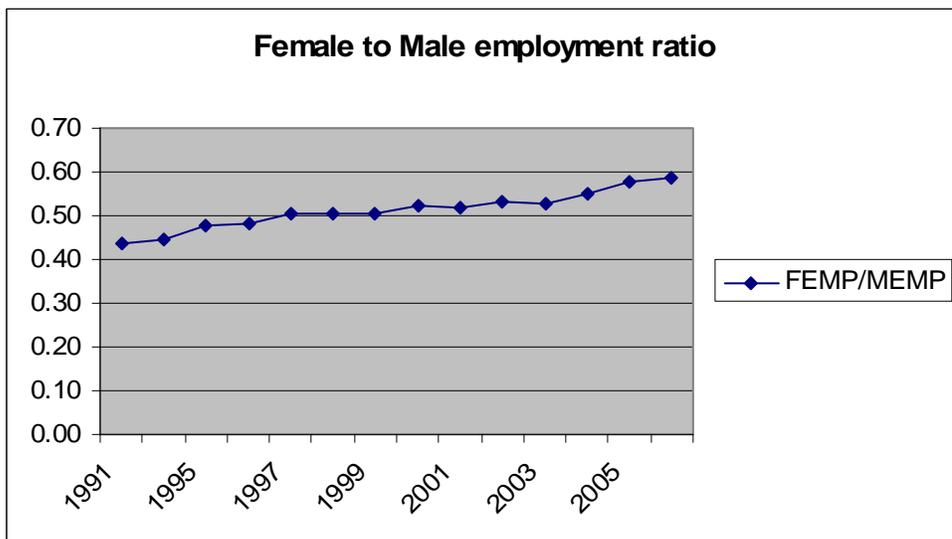
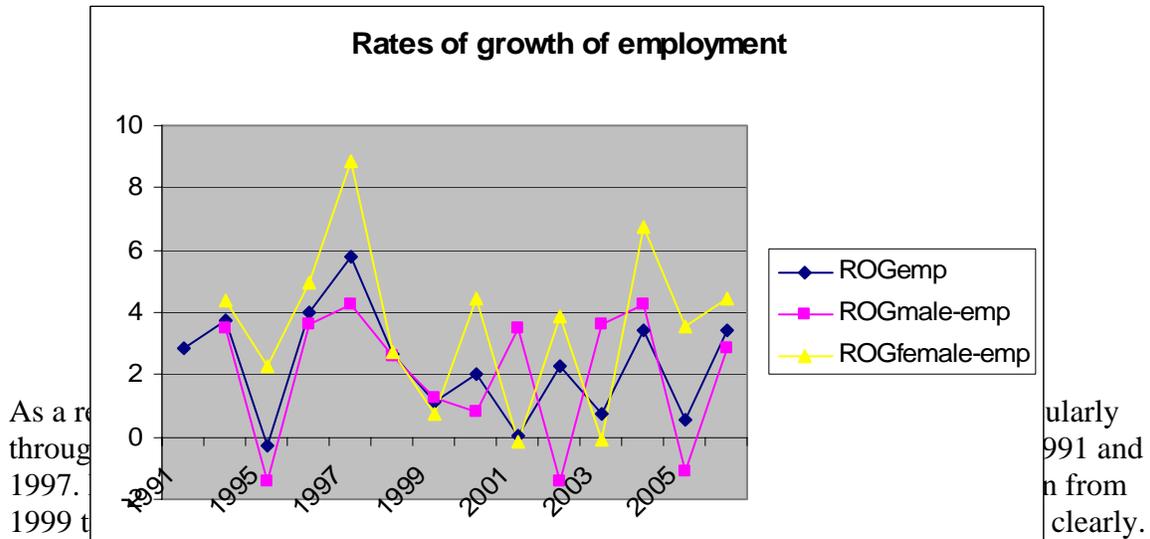
Even though both employment and LF decelerate between the first and the second period, given that the former decelerates a little faster, the ratio Employed/LF declines over the two periods and stays clearly below 1 for the second period (see Table 10).

	Employed/LF
1988	1.02
1991	1.01
1993	1.01
1995	0.95
1996	0.96
1997	0.97
2000	0.99
2002	0.97
2004	0.95
2006	0.98
Source: Calculations on the basis of data from ILO's Laborsta database	

	Female employment growth (1)	Male employment growth (2)	Total employment growth	(2)/(1)
1988-91			2.85	
1991-93	4.40	3.51	3.76	0.80
1993-95	2.28	-1.41	-0.27	-0.62
1995-96	4.96	3.59	4.03	0.72
1996-97	8.87	4.26	5.76	0.48
1997-2000	2.66	1.57	1.93	0.59
2000-01	-0.15	3.51	0.06	-23.08
2001-02	3.89	-1.41	2.30	-0.36
2002-03	-0.07	3.59	0.72	-55.13
2003-04	6.77	4.26	3.42	0.63

2004-05	3.58	-1.09	0.57	-0.30
2005-06	4.43	2.88	3.45	0.65
Source: Calculations on the basis of data from ILO's Laborsta database				

Like its other Latin American counterparts in this sample, as Table 11 and the associated graph make clear, the female employment rate of growth has, for most of the two periods, consistently been higher than the male employment rate of growth (see last column in Table 11). And this is true, for the most part even when employment decelerates and contracts.



Again like its other Latin American counterparts, labour use patterns are very clearly gendered and structural change does not seem to have altered these significantly. Again females are grossly under-represented in agriculture and over-represented in services. Males are over-represented in industry as well, but the extent is not quite as marked as their over representation in agriculture. Whereas structural change has not affected

females and males differentially, the fact that output and employment is driven by services where women are over-represented, does mean that women are much more likely to be in lower-paying service sector jobs than higher paying work in industry.

Table 12: Mexico: Structural change in female employment			
	1991	1996	2006
Agriculture	10.8	10.0	4.7
Industry	19.1	18.0	18.6
Services	70.1	72.0	76.2
Source: Calculations on the basis of data from ILO's Laborsta database			

Table 13: Mexico: Structural change in female employment			
	1991	1996	2006
Agriculture	33.8	28.1	19.9
Industry	24.5	25.0	30.1
Services	41.3	46.5	49.2
Source: Calculations on the basis of data from ILO's Laborsta database			

To conclude, first, structural change in Mexico has improved the relative efficiency of labour use in the non-agricultural sector of the economy whereas it has worsened in agriculture. Second, however, this improvement in the efficiency of labour use in non-agriculture is overshadowed by the fact that output and employment growth has been driven by the service sector and this sector has a very low output per unit labour particularly as compared with industry. Therefore in the first period, per capita income growth is constrained by the fact that the increase in the service sector's share in employment takes place at the expense of industry. In the second period even as the share of industrial employment increases, that of service sector expands faster. Third, not only is it case that the service sector has a low output per unit labour relative to industry, but it has also grown much more slowly, further constraining per capita income growth. Fourth, as with other Latin American economies in this sample, there is a very clear gender dimension to labour use with females being over-represented in services and males in agriculture and industry. Finally, the rising inefficiency of labour use in agriculture where 'relative surplusness' of labour has worsened as a result of structural change and the dominance of low output per unit services in employment might explain why poverty has been such a persistent part of the Mexican growth story.

#### IV. Conclusion

In this section we bring together the discussion in sections II and III and see if there are any inferences about structural change and employment that may be drawn, even from this limited a sample.

The high per capita income growth economies: The three high growth economies in our sample – Chile, Malaysia and Thailand – are different in many ways – Thailand has a 2006 per capita income of \$2990 whereas Chile and Malaysia have per capita incomes of \$6980 and \$5700 respectively. The importance of agriculture in employment is vastly different – in 1986 which is the beginning of our period – agriculture accounted for 68% of employment in Thailand; 31% in Malaysia; and 21% in Chile.

From the standpoint of the contribution of structural change to per capita income growth, there are very important similarities: first, and keeping with the discussion of successful structural change in WESS 2006, output growth in all three economies was driven by industry in general and manufacturing in particular; second, in the high growth phase which were periods of rapid structural change, output and employment change moved broadly in tandem; third, there was therefore a significant expansion of non-agricultural employment, in particular, the share of industry in employment saw significant increases. Therefore and fourth, in all three cases one of the following conditions holds: the decline in agriculture's employment share is significantly greater than its decline in output share if agriculture is the only sector shedding labour or the increase in industry's employment share is significantly greater than in its output share if industry is the only sector gaining labour. Fifth, in all three economies industry has the highest output per unit labour. In other words, during the high growth phase accelerated structural change in both output and employment contributed to per capita income growth in these economies.

This despite the fact that agriculture in all three economies suffers from fairly significant levels of relatively surplus labour. Particularly, in Chile and Thailand where R-O/E – our measure of 'relative surplusness' of labour – in 1986 was 0.44 and 0.24 respectively. In addition, despite substantial transfer of labour away from agriculture during the high growth period, these ratios did not change very much in any of the three economies. In fact in all three it worsened marginally. But this was counterbalanced by significant declines in the 'relative scarceness' of labour in both industry and services, particularly in Malaysia and Thailand. It is not as if 'relative surplusness' of labour in agriculture does not matter but that Malaysia and Chile started with relatively small shares of employment in agriculture, which diminished further as a result of structural change, minimising the impact an increase in 'relative surplusness'.

For Thailand however it was another matter – despite a sharp decline in the agriculture's share in employment, in 2006, it still stood at 42% and was the largest employer in the economy. Equally importantly, its R-O/E was stagnant – it stood at 0.25 in 2006 as opposed to 0.24 in 1986. Agriculture's continuing dominance in Thailand's employment structure and the inability to soak up relatively surplus labour might explain why \$2-a-day poverty, even though it has declined considerably, still persists. In 2001 it stood at 26%.

In the low growth period that followed in all three economies, a mis-match between structural change in output and employment in all three, undid some of the gains in structural change achieved in the high growth period. This, particularly in Chile and Malaysia, would have hindered productivity growth. In Malaysia, despite the fact that output growth was industry driven, a decline in labour absorption by industry meant labour at the margin switched from agriculture to services which have a much lower output per unit labour than industry.

In Chile in the low growth period the share of both agriculture and industry declined to the benefit of services. Unfortunately, in Chile, services have an output per unit labour

that is lower than both industry and agriculture and have also emerged as the largest employer, accounting for 64% of employment. Structural change then resulted in an increase in 'relative surplusness' in services with the R-O/E for the sector declining from 0.93 to 0.75 between 1996 and 2005. Therefore by the end of the period, both agriculture and services are characterised with rising levels of relatively surplus labour, though the former has relatively much higher levels than the latter.

Medium per capita income growth: If rapid structural transformation aided the process of per capita income growth in high growth economies, in India its lack clearly hindered the process. First, low levels of non-agricultural labour absorption have meant that transfer of labour out of agriculture has been very slow. As a result, even though the share of agriculture in employment has declined secularly, over both the periods that we considered, the decline in employment share is less than the decline in output share. This is one important difference between India and high per capita income growth economies in our sample.

Equally importantly, as a consequence of the small decline in agriculture's employment share, relative to the decline in output share, the 'relative surplusness' of labour in agriculture has seen a sharp and secular increase – the R-O/E ratio declines from 0.52 in 1983 to 0.33 in 2004/05. India therefore is saddled not only with a very high proportion of its employment still accounted for by agriculture – in 2004/05 it accounted for nearly 57% - but the 'relative surplusness' of this labour has also increased putting downward pressure on both wages and productivity. Little wonder then that India's performance in poverty alleviation has left so much to be desired.

It is worth pointing out that in 1983 India compared very favourably with other Asian economies in our sample in terms of 'relative surplusness' of labour in agriculture. Only Malaysia with an R-O/E of 0.60 in 1980 had lower levels of relatively surplus labour. And Malaysia had an equally sharp decline – between 1987 and 2000 the R-O/E declined from 0.64 to 0.46 respectively. But the slow pace of structural change in India has meant that the offsets that were available to Malaysia in terms of significant declines in 'relative scarceness' of labour in industry and services were not there for India. Or to put it differently, the rapid absorption of labour by industry was not there.

The only saving grace for India as far structural change is concerned is that even though the pace has been slow, in both periods that we have considered, output and employment changes have been broadly in the same direction. In both periods that we have considered, output and employment growth is service sector driven. In addition, in the second period, 1993/94-2004/05 which is a little more dynamic in terms of structural change, industry puts in a fairly robust growth performance as well as an improvement in labour absorption. In the first period most of the decline of employment in agriculture is absorbed by services and in the second period shared out between services and industry. Given that in India the service sector has the highest output per unit labour, a switch to services clearly aids per capita income growth. In addition, given that gap (though growing) between output per unit labour in services and industry is smaller than that

between industry and agriculture, increased labour absorption by industry would have aided per capita income growth as well.

Given this rather unique aspect about the Indian economy - it is the only economy in our sample where services has the highest output per unit labour – the pattern of structural change has aided per capita income growth. On the other hand, the slowness of structural change – the decline in agriculture’s share in employment is smaller than its decline in output share – has hindered per capita income growth. Therefore the bulk of labour in the economy is stuck in a sector with low output per unit labour, sharply rising relative surplusness of labour and relatively slow growing output per unit labour. Perhaps one of the reasons why relatively robust per capita income growth has taken place alongside slow declines in poverty.

Economies with low per capita income growth: In all low per capita income growth economies in our sample, output growth is service sector driven, and unlike in India, it is not the sector with the highest output per unit labour. Industry, far and away is. And again unlike in India, in both Brazil and Mexico, the gap in output per unit labour between industry and services is significantly greater than that between industry and agriculture. Put differently, industry has much greater output per unit labour than either services or agriculture, both of which are relatively close together. Therefore, and in line with WESS 2006, structural change in output and employment has been driven by a process of de-industrialisation that has pushed labour from a high output per unit labour sector into low output per unit labour sector, such as services.

Indeed in the first period (1986-96), the Brazilian and the Mexican experience of structural change qualify the earlier observation about the benefits of change in output and employment shares moving in tandem. Output and employment shares moving in tandem are beneficial for structural change driven per capita income growth only if they are being driven by the most productive sectors of the economy. But if, as in the Brazilian and Mexican case, structural change in output and employment has broadly moved together, but structural change is driven by a low output per unit labour sector such as services, it does not aid the process of per capita income growth. In the second period, more standard problems of mis-match between structural change output and employment diminish its role as a driver of per capita income growth by lowering efficiency of labour use.

Broadly then it would be fair to draw the following conclusions: first, rapid structural change in output and employment has contributed to per capita income growth in high growth economies; second, as India’s case demonstrates, even if the pattern of structural change is the right type, the pace of structural change has important implications for income growth and poverty, i.e., reasonably robust growth in per capita incomes can co-exist with very slowly declining poverty; third, this pace of structural change is of particular importance when agriculture accounts for the bulk of employment in the economy and is characterized by relatively high an increasing levels of relatively surplus labour; fourth, in economies with low income growth, patterns of structural change have hindered the process of income growth and poverty alleviation; but the patterns are

different in Asia and Latin America. In Bangladesh for example, a small and slow growing industrial sector leads to low employment absorption by industry and labour switches from largely from agriculture to low output per unit services. In Latin America, de-industrialisation leads to destruction of high productivity industrial jobs and pushes employment into low output per unit services. In both instances it leads to increasing 'relative surplusness' of labour, sometimes in sectors other than in agriculture as well.

#### Growth and the relative surplusness of labour:

As WESS 2006 notes, a low growth environment by leading to an underutilisation of labour resources might constrain productivity growth and we have of example of these in our sample – Bangladesh and Brazil.

But what happens when there is growth and levels of 'relative surplusness' do not come down? What is perhaps much more worrying from our standpoint is that in not a single high or medium per capita income growth economies in our sample – Chile, Malaysia, Thailand and India and Indonesia – where per capita income growth happened alongside a decline in the 'relative surplusness' of labour.

India of course is the most extreme instantiation of this process – between 1986 and 2006 the country has seen reasonably robust and sustained growth in per capita incomes. But alongside has been a sharp increase in 'relative surplusness' of labour in agriculture which still accounts for the bulk of employment (57%). In India's case, it is almost as if the more India grows in terms of per capita incomes, the more it enters the Lewisian world of surplus labour.

Some will argue that India is simply not growing fast enough. But Thailand's experience belies that. At one level Thailand is almost the classic case of rapid growth resulting in rapid structural change driven re-allocation of labour to higher productivity activities and thereby being an important driver of per capita income growth. Yet it was unable to make a dent in the very high levels of relatively surplus labour agriculture started with (R-O/E 0.24 in 1986 and of 0.25 in 2006). And equally importantly it still has agriculture accounting for substantial proportion of its employment (40%).

One way of dealing with stubborn levels of 'relative surplusness' of labour in agriculture is to ensure that rapid structural change in output and employment, leading to declines in employment shares in agriculture that are greater than the decline in output shares. Therefore even if the level of 'relative surplusness' of labour does not change in the high growth phase as in Chile or worsens as in the case of Malaysia, the rapidly declining weight of agriculture in employment mitigates its impact on efficiency of labour use.

But what if in the phase of deceleration in growth, a sharp drop in labour absorption in the high output per unit labour sector (industry in this instance), switches labour from both agriculture and industry to services, as in Chile? And what if output per unit labour in services is the lowest in the economy, i.e., lower than in agriculture, again as in Chile? In which case, the two low output per unit labour sectors account for the overwhelming bulk of employment – agriculture accounting for 15% and services for 64% of

employment in 2005 in Chile – are both characterised by high levels of ‘relative surplusness’ of labour (R-O/E ratios of 0.42 and 0.75 in agriculture and services respectively).

Malaysia has a similar problem, only services in Malaysia have a higher output per unit labour than in agriculture and the increase in the ‘relative surplusness’ of labour in services was not as sharp (R-O/E ratios of 0.46 and 0.87 for agriculture and services respectively). In addition, Malaysia’s share of industry in employment is greater than in Chile – 32% in 2000 and Chile’s highest share between 1986 and 2005 was 26% in 1996. For ‘relative surplusness’ of labour therefore upturns matter as much as downturns because an economy can lose in the downturn what it has gained in the upturn.

It could be argued that each of these economies is an outlier. Be that as it may, each of them has very different institutional specificities and has very different levels of integration with the global economy. Therefore that in their episodes of high growth they were unable to deal with ‘relative surplusness’ of labour has at least to be interrogated. And this because high levels of relatively surplus labour might not just influence poverty outcomes but might also constrain productivity growth in the long term, just as in low growth economies.

Maybe we need to take another look at the assumption that productivity driven per capita income growth will automatically take care of issues of ‘relative surplusness’ of labour. Maybe we need to look specifically at sectors burdened with high levels of ‘relative surplusness’ of labour and think of ways of reducing that. For example, in economies where agriculture has a very high share of employment and agriculture’s share in output has fallen very rapidly, it might be worthwhile trying to maintain agriculture’s share in output, even as its share in employment continues to decline. Or if that is too ambitious in phases of rapid output growth, then at least substantially reduce the pace of decline in agriculture’s output share. Be that as it may, it is our understanding that the link between increasing productivity levels and declining ‘relative surplusness’ of labour can no longer be taken for granted and that it is an issue that needs to be addressed in its own right, at least in today’s developing economies.

#### Labour force and patterns of labour use across gender:

Even though it is very difficult to draw any broad generalizations about LF participation ratios (PRs) and income growth outcomes from our small sample, it might be useful to note the following: two of our high income growth economies have fairly low PRs and saw fairly small increases in these in the two decade period under review. Chile saw its PR increase from 0.35 to 0.39 and the bulk of it was accounted for by an increase in FPR that increased from 0.20 to 0.28. MPR on the other hand increased from 0.50 to 0.53 and then declined to 0.51. Malaysia actually saw a sharp decline in PR at the beginning of the period from 0.44 to 0.38 after which it climbed back to 0.41. The decline affected both FPR which fell from 0.31 to 0.26 and the MPR which fell from 0.56 to 0.47. After that both FPR and MPR increased – from 0.26 to 0.29 for the former and from 0.47 to 0.53 for the latter – but the bulk of the increase was accounted for by the latter. On the other hand Thailand has had relatively higher PRs, rising from 0.51 to 0.56 and both have FPR and

MPR risen alongside – from 0.48 to 0.51 for the former and from 0.54 to 0.62 for the latter. A low income growth economy such as Brazil saw a sharp increase on PRs from 0.40 to 0.61. In the process FPR nearly doubled 0.27 to 0.51 and MPR increased from 0.53 to 0.71.

Given the low growth environment and the sectoral pattern of income generation in which Brazil's increase in PRs have taken place, it can plausibly be argued that it reflects distress participation. Similarly in India the recent increase in participation ratios of rural females can be argued is a result of distress participation. But why did participation ratios in Chile and Malaysia, which were at fairly low levels to start with, fail to rise as one would expect to happen alongside rapidly increasing per capita income growth? It might be worthwhile exploring if in Malaysia's instance this is related in any way to the increasing levels of 'relative surplusness' in agriculture that accompanied per capita income growth. In Chile's instance it will be worthwhile exploring if the anaemic increase in MPRs is related to rising levels of 'relative surplusness' in agriculture where males are over-represented in the employed workforce.

Gender and employment – differences in adjustment patterns: There is one pattern that does emerge that might be of interest: in all Asian economies in our sample, barring Philippines, the rate of growth of male employment was greater than that of female particularly during periods of decelerating employment and as a result, FEMP/MEMP – the female to male employment ratio - declined for the greater part of our two periods. There is therefore some evidence to suggest that the female employment essentially acted as a stabilizer to movements in the overall labour market.

In all three of our Latin American economies and in Philippines on the other hand, the rate of growth of female employment was for the most part greater than that of male employment and as a result, FEMP/MEMP ratios see a secular increase. This might have something to do with the fact that all three Latin American economies have much higher levels of urbanization and some modicum of social security and therefore respond to labour markets shocks differently.

There is however one other explanation for the increase in FEMP/MEMP ratios in Philippines, Brazil, Chile and Mexico that brings together gender differences in occupational structure and patterns of employment growth. Labour use patterns are quite distinct across gender when we compare Latin American and Philippines on the one hand with other Asian economies in our sample on the other. In all three Latin American economies, women are under-represented in agriculture and industry and over-represented in services. This is true of the Philippines as well, though differences are not quite as stark as that in Latin American economies in our sample.

As we know output and employment growth in these four economies has been service sector driven for the most part. This is true of Philippines, Brazil and Mexico for both periods, and it is true of Chile in the second period. And in Chile, it is in the second period that we see a much sharper increase in the FEMP/MEMP ratio. Given that employment growth has been service sector driven and an over-representation of females

in service sector employment, we would expect female rates of employment growth to be higher than that of males and therefore an increase in FEMP/MEMP ratios

Structural change in employment and gender: Gender differences in occupational structure may be quite stark in the Latin American economies in our sample but the process of structural change itself did not have a gender dimension, at least over the period of our study. In other words changes in employment patterns for both females and males were in line with patterns for the broader economy as a whole.

Malaysia, and to a lesser extent Thailand, however provide us with examples where the process of structural change in employment had a clear gender dimension. In Malaysia the decline in the share of agriculture in female employment was much sharper than that in male employment. In addition, males switching away from agriculture were much more likely to switch to industry (where output per unit labour is much higher than in services) rather than services, whereas females were much more likely to switch to services rather than industry. So it may be that Malaysia is moving towards a pattern where occupations are segmented along gender lines as in the Latin American economies in our sample.

Finally the relationship between relative surplusness of labour is not the same across gender: therefore rural females in India, who are over-represented in agriculture and have very limited mobility options, bear the brunt of increasing relative surplusness of labour in Indian agriculture; but in Latin America, it is males, who are over-represented in agriculture, who have to live with the consequences of increasing relative surplusness of labour; and in Chile, in addition, females, who are over-represented in services, have to bear the brunt of adjusting to increasing surplusness of labour in services; finally if rural females in India are stuck in agriculture because of limited mobility, females engaged in agriculture in Malaysia have more mobility than their male counterparts but only, more often than not, to end up in low output per unit labour service sector jobs.

Therefore in some contexts females and in some others males have had to deal with brunt of adjusting to and living with increasing relative surplusness of labour. And in some context there has been some mobility as well for females in the employed workforce. But what does not seem to have changed is that males seem consistently over-represented in sectors with the highest output per unit labour.

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