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Income Distribution Changes and their Impact in the Post-World War II Period

Giovanni Andrea Cornia[1] and Tony Addison[2] with Sampsa Kiiski[3]

March 2003

Abstract

This paper analyses the trends in within-country inequality during the post-World War II period, with particular attention to the last 20 years, on the basis of a review of the relevant literature and of an econometric analysis of inequality trends in 73 countries accounting for 80 per cent of the world's population and 91 per cent of world GDP-PPP. The paper suggests that the last two decades have been characterized by a surge in within-country inequality in about two-thirds of the developing, developed and transitional nations analysed. It also suggests that in those countries where the upsurge in inequality was sizeable or where inequality rose from already high levels, growth and poverty alleviation slowed down perceptibly. While this trend towards higher inequality differs substantially across countries in its extent, timing and specific causes, it marks a clear departure from that observed during the first 30 years of the post-World War II period during which, with the exception of Latin America and parts of Sub-Saharan Africa, a widespread move towards greater egalitarianism was noted in the majority of the socialist, developing and industrialized economies.

Keywords: inequality, poverty reduction, policy reform, egalitarian growth

JEL classification: D30, N30, O57

[1] University of Florence, email: giovanniandrea.cornia@cce.unifi.it; [2] UNU/WIDER, email: addison@wider.unu.edu; [3] Helsinki, email: sampsa.kiiski@nokia.com

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1 Introduction

This paper analyses the trends in within-country inequality during the post-World War II period, with particular attention to the last 20 years. This is done on the basis of a review of the relevant literature and of an econometric analysis of inequality trends in 73 countries, which account for 80 per cent of the world's population and 91 per cent of world GDP-PPP. The paper suggests that the last two decades have been characterized by a surge in within-country inequality in about two-thirds of the developing, developed and transitional nations analysed. It also suggests that in those countries where the upsurge in inequality was sizeable or where inequality rose from already high levels, growth and poverty alleviation slowed down perceptibly. While this trend towards higher inequality differs substantially across countries in its extent, timing and specific causes, it marks a clear departure from the pattern observed during the first 30 years of the post-World War II period during which a widespread move towards greater egalitarianism was noted in the majority of the socialist, developing and industrialized economies, with the exception of Latin America and parts of Sub-Saharan Africa.

2 Trends in within-country income inequality in the post-World War II period

2.1 The OECD countries: mostly U-shaped inequality pattern

The developed market economies emerged from World War II with a relatively high income inequality. Income concentration, however, declined steadily over the 1950s, 1960s and most of the 1970s (Table 1). This view is confirmed by a review of income distribution trends sponsored by the OECD (Sawyer 1976: 26) which concludes that:

> broadly, it would appear that through the 1950s there has been some movement towards greater equality almost everywhere. In the 1960s and early 1970s, the same remained true for France, Italy, Japan and the Netherlands. The picture is unclear in Germany ... and in the United Kingdom ... In North America, there seems to have been a marginal move away from inequality.

A steady decline in unemployment (which fell to an unweighted OECD average of 2.7 per cent by 1973), stable earnings inequality and a rapid expansion of social security led to a steady rise in the labour share and to a drop in the concentration of the pre-tax,

Table 1
Interdecile ratio [a of pre-tax or post-tax income distribution in selected OECD countries

Country	Canada (pre)	France (pre)	Germany (post)	Italy (post)	Japan (pre)	Holland (post)	UK (pre)	USA (pre)
Around 1950	19.6	–	13.9	–	–	17.6	–	23.8
Around 1960	16.6 [b	40.1	11.2	19.1 [c	8.5	12.5	11.5	25.0
Around 1970	26.5	26.6	11.7	15.8	6.6	10.6	11.8	23.4

Source: Authors' elaboration on data in Sawyer (1976).

Notes: [a ratio of the income shares of the top and bottom deciles;[b 1965; [c 1967.

Figure 1
Trends in the Gini coefficients of the distribution of gross income in the USA (upper curve) and of net income in the UK (lower curve), 1944-97

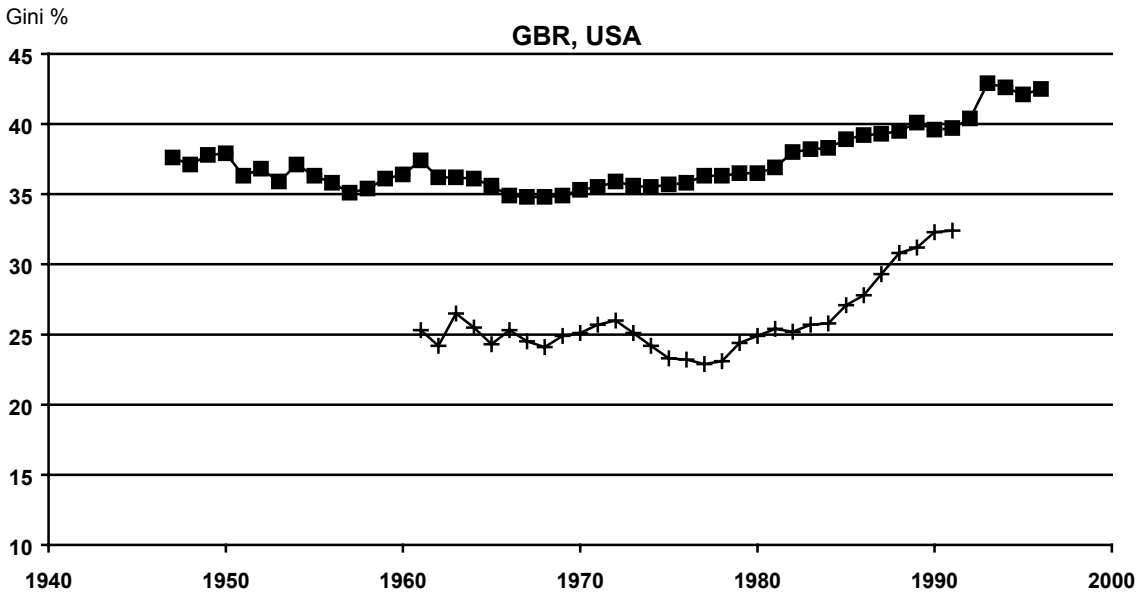
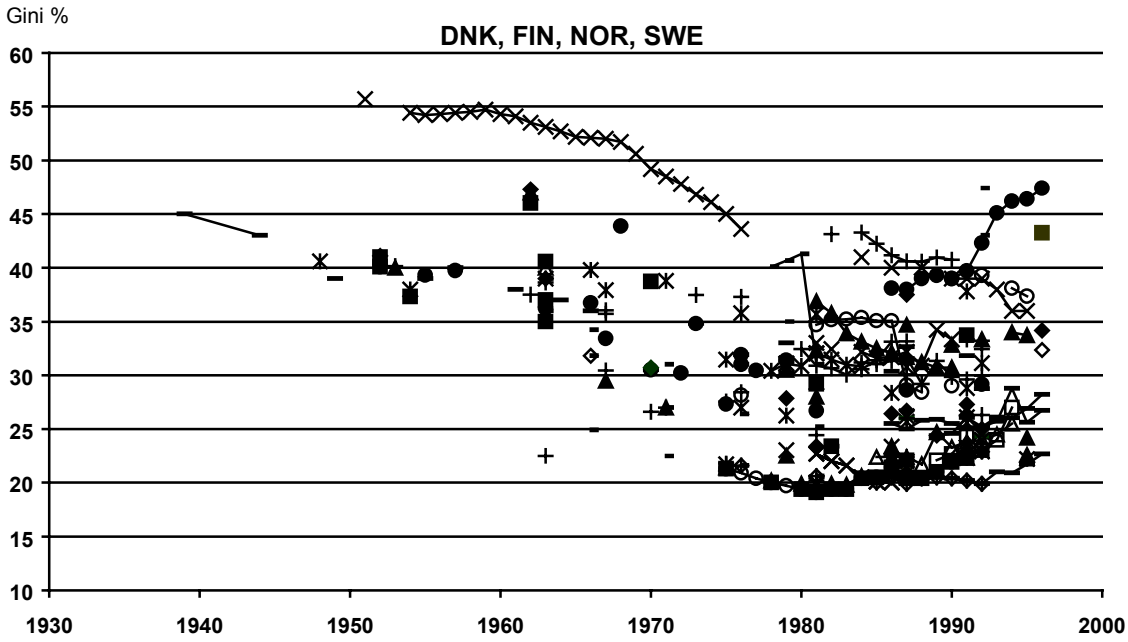


Figure 2
Trends in the Gini coefficients of the distribution of income (various concepts) in the Nordic countries (Denmark, Finland, Norway and Sweden), 1939-98



pre-transfer income distribution (Boltho 1997). In addition, the social security schemes introduced or expanded during the second Golden Age reduced even more rapidly the inequality of the distribution of post-tax post-transfer income. Between 1951 and 1975 public expenditure on social security rose steadily from 3 to almost 12 per cent of GDP in the USA, from 7 to 14 per cent in Australia, Canada, New Zealand and the United Kingdom, and from 8 to 20 per cent in eleven Western European countries (Cornia and Danziger 1997: Figure 3). Thus,

> despite a surprisingly stable pre-tax earnings structure, the distribution of post-tax income has nonetheless changed towards greater equality in those European countries for which reasonably reliable data are available. Fairly pronounced changes along these lines have taken place in Italy, the UK and the Netherlands; more modest ones in France and Germany (Sawyer 1976: 216-7).

Since the late 1970s this trend has been halted or reversed in most of the region: first, inequality started rising in the mid-to-late 1970s in the USA, UK, Australia and New Zealand which were the first among the OECD countries to adopt a neoliberal policy approach (Brandolini 1998). The increase was particularly pronounced in the UK where the Gini coefficient of the distribution of net disposable income rose more than 30 per cent between 1978 and 1991, i.e. twice as fast as that recorded in the US during the same period, and double the fall registered in the UK between 1949 to 1976 (Figure 1).

The Scandinavian countries and the Netherlands are part of a second wave of countries where, as in the Anglo-Saxon nations, inequality follows a U-shaped pattern, though the trend reversal in these countries took place some 5-10 years later than in the first group, and the rise in inequality started from lower levels and was less pronounced (Figure 2). A third wave of countries including Finland and, to a lesser extent, France, experienced a gradual flattening of inequality indexes starting around 1975-80 (Brandolini 1998). In Italy, inequality rose by 4 points between 1992-95, most likely as a result of the introduction in 1993 of measures to control the fiscal deficit as well as privatization and liberalization (Brandolini 1998). These overall changes are well described in Atkinson *et al.* (1995: 63) who notes that,

> in the first half of the 1980s there was a marked rise in income inequality in Sweden and the UK. This rise is more striking in that it came after a period in which inequality fell: there was a reversal of the previous trend. ... the pattern in the Netherlands, Norway and Denmark has some similarity … In Finland and France, it appears to be the case of a trend towards reduced inequality having come to a stop; ... in Ireland and Italy the downward trend continued, in the latter one with a cyclical component.

Despite its reputation for having achieved fast growth with equity, Japan also experienced a rise in income inequality during the last two decades. Before World War II, Japan was characterized by a large income gap between the rich and the poor. These large differences were substantially reduced during the first three decades of the post-World War II period. By the mid-to-late 1970s, the Gini coefficient of net disposable income had fallen to around 0.30 (Ozawa 1997). However, since the early 1980s, this trend has been reversed, and in 1993, the Gini coefficient stood at 0.44, almost the same as the United States and far higher than that of countries such as Sweden and Denmark (Table 2). One of the recent

factors contributing to this rise in inequality has been the policy to end Japan's decade-long economic slump by lifting restrictions on competition. This forced companies to scrap the old egalitarian lifetime employment system, with its age-based wagescales, in favour of rewarding productive workers with higher salaries. The ranks of those earning little or no income have also swelled as the economy's slide into recession has increased bankruptcies and the attendant job-cutting. The rise in inequality has also been influenced by the growing number of low-paid women entering the workforce and soaring land prices in the 1980s.

Most of this increase in *income* inequality in industrialized countries is explained by a rise in *earnings* inequality (Gottschalk and Smeeding 1997). Countries with centralized wage-setting institutions (Germany, Italy), a high union density and comparatively high minimum wages (France) contained the pressures towards higher earnings inequality and experienced either smaller increases in earnings inequality or no increases at all. At the other end of the spectrum, the US and other countries with decentralized wage negotiations and flexible labour markets experienced the largest rises. In the US, respectively 30 and 20 per cent of the rise in earnings concentration is explained by a 44 per cent fall in the minimum wage and the decline in unionization (ibid).

Other factors contributed to the rising inequality. An upsurge in the share of financial rents, urban land rents and profits depressed the wage share and contributed to the growing dispersion of market incomes. The profit share in industry, transport and communication rose in the middle 1970s and early 1980s in all industrialized countries (UNCTAD 1997). In addition, returns to financial capital increased in line with the adoption of the policy of high interest rates which dominated the period 1982-93 and which induced an increase in the share of GDP assigned to financial rents, particularly in countries with a large domestic debt. Finally, the redistributiveness of the tax and transfer system declined, as the value of transfers fell relative to GDP and personal income tax became less progressive (see Atkinson 2003) and contributed, if modestly, to the increase in inequality of disposable incomes.

Table 2
Trend in the Gini coefficient of various income concepts in Japan

Year	Before taxes, before transfers	After taxes, before transfers	After taxes, after transfers
1970s	0.300	–	–
1981	0.349	0.330	0.314
1984	0.398	0.382	0.343
1987	0.405	0.388	0.338
1990	0.433	0.421	0.364
1993	0.440	–	–

Source: Ozawa (1997).

2.2 The widespread rise of inequality in the former Soviet bloc

In these countries, the inequality of the distribution of net disposable income narrowed up to the mid-to-late 1970s and increased moderately during the mid-to-late 1980s owing to the spread of the 'second economy' in Hungary and Poland and the introduction of wage

incentives during the Gorbachov era in the USSR (Atkinson and Micklewright 1992). Conclusions about the level and trend of inequality in the region would change somewhat, if not fundamentally, if the disequalizing impact of dual distribution systems and the growing regional differences in the supply of consumer goods were taken into account (Braithwaite and Heleniak 1989).

Since 1989, income concentration has risen moderately in the transition countries of Central Europe (Table 3) where earnings inequality rose less than anticipated and a comprehensive welfare state was preserved (Milanovic 1998). In contrast, in the former USSR and Southeastern Europe, the Gini coefficients rose on average by 10-20 points, i.e. 3-4 times faster than in Central Europe. In these countries, the transitional recession and fall in the wage share were very pronounced, social transfers declined, their composition and targeting deteriorated (Milanovic 1995; Cornia 1996) and privatization was far less egalitarian than in Central Europe.

Table 3
Gini coefficients of the distribution of net per capita disposable income over 1989-95

Moderate increases	1989 Gini	1989-95 Increase	Large increases	1989 Gini	1989-95 Increase
Slovenia	23.7	1.3	Lithuania	27.5	8.5
Hungary	21.4	1.6	Latvia	22.5 [a]	8.5
Slovakia	19.5	3.0	Estonia	27.7	11.9
Romania	23.5	4.9	Bulgaria	25.0 [b]	12.0
Czech Republic	18.5	4.9	Moldova	26.7	13.3
Poland	24.9	5.1	Russia	25.7	15.2
			Ukraine	23.3 [a]	24.1

Source: UNICEF (1995); Milanovic (1998) for Latvia and Ukraine.

Notes: [a] 1988: the data are not always comparable over time due to changes in sampling procedures. For a few countries and years the data refer to gross household income per capita; [b] 1990.

Table 4
Decomposition of the increase in the Gini coefficient of the distribution of household incomes between the pre-transition period and the years 1993-96

	Due to							
		Change in concentration of						
				Out of which				
Country	Change in income structure	Wages	Social transfers	Pensions	Non-pension transfers	Non-wage private sector	Interaction term	Overall Gini change
Hungary (1989-93)	-1.3	+5.9	-0.6	+1.4	-0.2	-0.6	-1.3	+2.2
Slovenia (1987-95)	-0.2	+3.6	-0.6	-0.1	-0.4	+0.4	-3.8	+2.6
Poland (1987-59)	-1.7	+3.4	+3.5	+3.2	-0.1	+0.8	+0.9	+7.0
Bulgaria (1989-95)	+1.4	+7.8	+0.9	+0.4	+0.4	-0.4	+0.3	+10.0
Latvia (1989-96)	-1.6	+15.0	-1.5	-2.0	+0.5	+1.4	-3.3	+10.0
Russia (1989-94)	-3.4	+17.8	+5.1	+3.9	+0.4	+3.0	+1.2	+23.6

Source: Milanovic (1998: Table 4.2).

Also in this region, rising earnings inequality seems to have played a central role in the surge of income inequality (Table 4). This rise has been attributed to the emergence of scarcity rents for professionals such as bankers and other specialists who were undersupplied during the socialist period and to a general rise in returns to education following liberalization (Rutkowski 1999). Such explanations, based on standard human capital theory, account however for less than half of the rise in earnings inequality. To start with, many highly educated state employees continued to receive very low wages. Earnings inequality appears to have risen also because of a fall in the minimum wage relative to the average (Standing and Vaughan-Whitehead 1995), the expansion of a highly inequitable informal sector, mounting wage arrears and a surge in interindustrial wage dispersion unexplained by productivity differentials which favoured workers in politically influential sectors and penalized workers in sectors like health, education and agriculture (Cornia 1996).

The limited contribution of the rise in capital incomes to the overall rise in income inequality suggested by the first column of Table 4 is perplexing and likely depends on the massive undersampling and underreporting of high incomes in household budget surveys, as suggested by the growing discrepancy between average income per capita derived from the national accounts and the household budget survey. The limited information available on the distribution of financial assets and bank deposits tends to supports this view.

2.3 Latin America: a rise in inequality in the 1980s followed by a further rise or stagnation in the 1990s

With the exception of highly urbanized and educated Uruguay and Argentina, in the early-to-mid 1950s Gini coefficients in Latin America traditionally ranged between 0.45 and 0.60—i.e. among the highest in the world (Altimir 1996). This acute income polarization was rooted in a highly unequal distribution of land and educational opportunities, which benefited a tiny agrarian, mining and commercial oligarchy. The rapid growth which followed the adoption of import substituting industrialization in the 1950s had, on the whole, a disequalizing impact. Of the twenty-one growth spells recorded over 1950-79, inequality fell in four cases, stagnated in five, and rose in eleven (Altimir 1994). In the 1970s, however, inequality declined moderately in most of the region except for the Southern Cone countries (Altimir 1996) following the introduction of extreme versions of neoliberal reform by military regimes. The combination of a rise over the 1950s-1960s and of a fall over the 1970s meant that by 1980, all medium and large-sized Latin American countries had a greater concentration of income than in the early-to-mid 1950s. From 1980 to the early 1990s, inequality in the region was affected by large external shocks and the recessionary adjustment introduced to respond to them, while a slow growth pattern dominated the rest of the 1990s. In the 1980s inequality declined in only three countries (Colombia, Uruguay and Costa Rica) (Altimir 1996), a fact that made Iglesias (1998: 6) note '... at the end of the decade [of the 1980s], there was a substantial rise in inequality in most cases. That means that the recession of the 1980s hit the poor harder than the rich'.

Most importantly, income polarization did not decline and in some cases it worsened even with the resumption of growth, as shown by a recent review of inequality changes in the 1990s based on 49 nationwide representative household surveys covering 90 per cent of the population of the region (Székely and Hilgert 1999). The review shows that none of the countries examined recorded a distributive improvement during this period. In eight

cases, significant increases in inequality were noted between the first and last observations of the 1990s, while in seven cases there was no change.

The income polarization of the 1980s (and likely of the 1990s) was the result of surges in inequality during recessionary spells and slow declines during periods of recovery. Cornia (1994) estimated, for instance, that in the 1980s the regional poverty elasticity of growth was 1.8 during recessions but only 0.6 during recoveries. In particular, the functional distribution of income worsened during recessions, as suggested by the decline by 5-6 percentage points in the labour share between 1980 and the late 1980s in Argentina, Chile and Venezuela and the 10-point decline of Mexico (Sainz and Calcagno 1992). Five structural labour market changes underlie this trend. These include a slowdown in job creation, a growing informalization of the labour market (due to a shift to the non-traded sector where lower productivity and wages are the rule), a slower rise in average formal sector wages in relation to GDP per capita and a fall in the minimum wage in relation to the average wage (Tokman 1986; Sainz and Calcagno 1992; see also van der Hoeven and Saget 2003). The fifth structural change concerns a widening in wage differentials by skill and educational level (Székely and Hilgert 1999). This review may be concluded by noting with Altimir (1996: 59) that

> Under these new economic modalities (characterized by trade openness, fiscal austerity, a prudent management of monetary policy, less public regulation of markets and more reliance on private initiative), the pattern of income distribution tends, as suggested above, to be unequal at the very least, and more unequal—in most cases, at least in urban areas—than those that prevailed during the last stages of the previous growth phase in the 1970s.

2.4 China: a U-shaped trend driven by rising regional and urban-rural inequality

In China too, income inequality has followed a U-shaped pattern over the last 50 years with the turnaround point located around the mid 1980s. While, at the beginning of the Maoist experiment in 1953, the nationwide Gini coefficient of the distribution of household incomes was equal to 0.56, the subsequent creation of agricultural communes, socialization of industrial assets and development of an embryonic social security system reduced the index to 0.31 in 1964, and to 0.26 by 1975, despite the persistence of large regional differences in natural endowments (Table 5).

The agricultural reforms adopted since 1978 replaced the rural communes with an egalitarian family-based agriculture and introduced considerable price incentives for farmers. The result was a sharp acceleration of growth that was sustained at the 8-10 per cent level between 1978 and 2000. During the rapid agriculture-led growth years of 1978-84, there was only a modest upsurge in inequality in both rural and urban areas. As a result, the rural poverty rate fell precedentlessly from 30.7 per cent in 1978 to 15.1 per cent in 1984—literally halving the percentage of rural poor in just six years (Gustafsson and Zhong 2000). In turn, the urban Gini coefficient stagnated at a very low level,[1] as the

[1] The urban poverty rate does not take into account, however, the floating population which is much more likely to fall into poverty (Gustafsson and Zhong 2000).

introduction of various performance-related bonuses in urban-based state enterprises[2] did not apparently lead to any visible rise in the urban income disparity while transfer payments sheltered the registered urban population from the price and stabilization reforms of the 1980s (Ahmad and Hussain 1991).

In contrast, income concentration rose rapidly during 1985-90 and accelerated from 1990s onwards so that the national Gini coefficient reached 0.43 by 1995 and remained broadly at the same level until 1998 (Table 5). The rise in income disparity since the mid 1980s can be traced to a rise in the urban-rural gap driven by a faster expansion of urban activities (Ping 1997), a 30 per cent decline in agricultural prices over 1993-98 and a tripling of agricultural taxes levied by the central and local authorities (see Lipton and Eastwood 2003). In view of the unequal spread of non-agricultural activities across provinces, interprovincial inequality also became an important contributor to overall inequality, as indicated by the widening of the interprovincial income gap (last column of Table 5; see also Lipton and Eastwood 2003). Although incomes grew in less well-endowed provinces as well, the 1990s witnessed a rapid growth divergence between the rich coastal provinces and the poor interior ones. Finally, the 1988 and 1995 surveys of rural incomes suggest that widening rural inequality within some province was also due to an rise in earnings inequality in township and village enterprises (McKinley and Brenner 1998).

This rise in inequality had an obvious impact on poverty alleviation. The pace of rural poverty alleviation declined over 1984-95 as compared to 1978-84 despite a fall in the young age dependency ratio (Gustafsson and Zhong 2000). Furthermore between 1988-95 the poverty rate rose in western China and several mountain locations (ibid). Public policy

Table 5
Evolution of the Gini coefficients and the income gap in China, 1953-95

	Gini coefficients				Inter-provincial income gap		
Year	Overall	Urban	Rural	Income gap, U/R [a]	Rural [b]	Urban [b]	Total [b]
1953	0.56 [c]	–	–	–	–	–	–
1964	0.31 [c]	–	–	–	–	–	–
1978	0.32	0.16	0.21	2.37	–	–	–
1981	–	0.15	0.24	2.05	2.80	1.81	12.62
1984	0.28 [d]	0.16	0.26	1.71	3.16 [e]	1.59 [e]	9.22 [e]
1988	0.38	0.23	0.30	2.05	–	–	–
1990	–	0.23	0.31	2.02	4.17	2.03	7.50
1995	0.43	0.28	0.34	2.47	4.82	2.34	9.79
1998	0.41 [c]	–	–	–	–	–	–

Source: Various data from China's State Bureau of Statistics and World Bank (2000).

Notes: [a] ratio between the average urban and rural average income; [b] ratio between the average income of the highest to the lowest province, by rural, urban and total area; [c] data for these years *are not comparable* with those of the other years and are provided only for illustrative purposes; [d] refers to 1983; [e] refers to 1985.

2 Industrial reforms were introduced starting from 1984.

was an important contributor to this income polarization. The fiscal decentralization of 1978 substantially reduced the ability of the central government to control regional inequality by means of transfers to poorer provinces. In addition, industrial policy played an even greater disequalizing role as it explicitly favoured the coastal provinces through the granting of special administrative and economic powers, tax privileges and other benefits which facilitated the development of export industries and the inflow of foreign direct investment.

2.5 East and Southeast Asia: a common if milder reversal of inequality trends

It is widely believed that the countries in this region were able to combine fast growth with equity. This view however is not entirely accurate. First of all, the initial level of income inequality varied considerably between the less egalitarian nations of Southeast Asia and the more equitable ones of Northeast Asia (see Figure 3) that, in the immediate postwar period, confiscated and redistributed land and other assets (like the 'zaibastu' in Japan), imposed steep wealth taxes and ensured a widespread and stable access to education. The Southeast Asian countries, in contrast, never undertook any reform to equalize rural incomes and relied for their development on resource rents which, ceteris paribus, increased inequality (Jomo 2000). Thus, in the 1950s and 1960s, Hong Kong, Thailand, Singapore and Malaysia had Gini coefficients in the 0.40–0.50 range (You 1998; Oshima 1998).

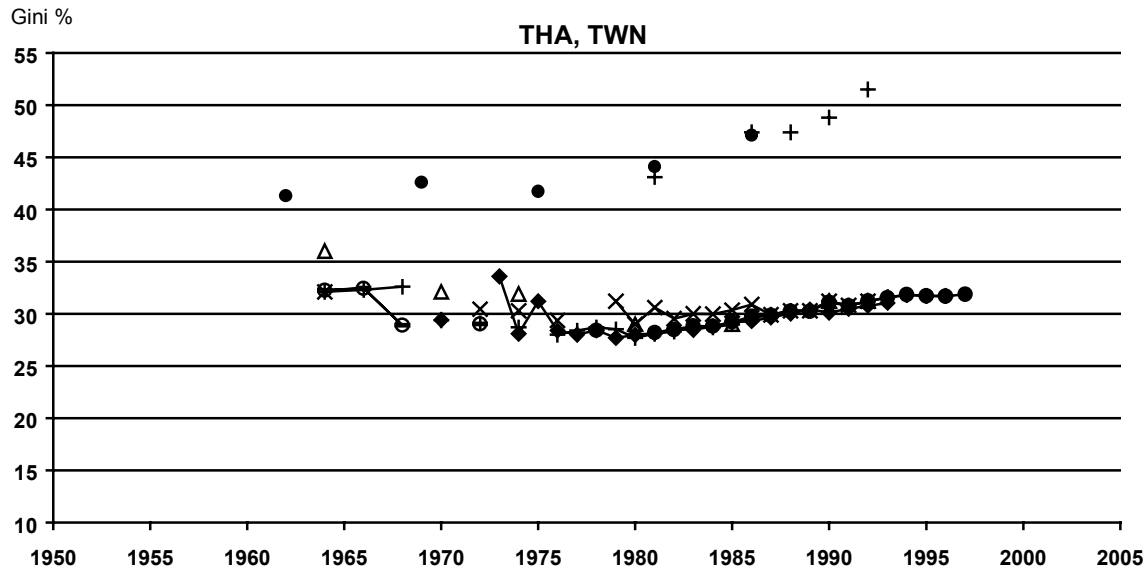
Second, and most importantly for the focus of this study, between the late 1950s and the mid 1990s, the Gini coefficient rose from 0.41 to 0.52 in Thailand (see Sarntisart 2003), from 0.34 to 0.39 in South Korea, and followed an inverted U-pattern in Malaysia (Oshima 1998). In South Korea, however, the trend towards greater income inequality was accompanied by a remarkable decline in earnings inequality, the Gini coefficient of which fell from 0.40 to 0.29 over 1976-93 owing to a narrowing of wage differentials between educational groups, occupations and genders (Fields and Yoo 2000). In turn, Hong Kong, Taiwan and Singapore show a mild U-pattern, with fairly rapid declines in inequality until the late 1970s and early 1980s, followed by moderate rises offsetting half of the earlier fall (Oshima 1998). In Taiwan, for instance, the Gini coefficients of the distribution of net income fell from 0.32 to 0.28 between 1964 and 1980 thanks to a rapid expansion of employment for both low-skilled and well-educated workers. While the demand for all types of labour expanded quickly, the demand and wages of low-skilled workers rose more than the average (Kanbur 2000). Over 1980-93, however, the development of skill-intensive sectors pushed up wage inequality again, while the share of capital and property incomes in the total surged in line with the development of large corporations and escalation of land prices. By 1993, Taiwan had again reached the level of inequality prevailing in 1964 though it was still below that of the 1950s.

Indonesia also follows a mild U-pattern with a Gini of total income of 0.35 in 1964-65 declining to 0.32 by 1987-90 to rise again to 0.38 by 1997 (Feridhanusetyawan 2000). During the first period, inequality fell thanks to the investment of oil surpluses in financing the green revolution. This substantially raised employment and production opportunities in the rural sector and, given a low land concentration, reduced substantially rural income inequality. In contrast, the years from 1987 to 1996—during which the economy underwent a radical devaluation, tariff reform and financial deregulation—were characterized by the development of the urban-based manufacturing and capital-intensive

finance, insurance and real estate (FIRE) sector, a slowdown in agriculture and a widening of the urban-rural gap (see Lipton and Eastwood 2003). This trend was exacerbated by the lack of an effective income transfer system and the retrenchment of strongly equalizing rural development programmes. As a result, overall inequality rose from a low of 0.32 in 1987 to 0.38 in 1997 (Feridhanusetyawan 2000) although the fast growth of this period still achieved a cut in the overall poverty rate from 17 to 11 per cent over 1987-96.

The effect of the Asian crisis on poverty was immediate, due to a sharp output contraction, while that on inequality manifested itself in two stages. During the first phase, poverty remained constant or even declined marginally as the crisis hit hardest middle-high-income workers in the FIRE sector. In a second phase, however, inequality rose—especially in urban areas—due to the recession induced by the crisis, the stringent stabilization measures introduced to combat it and the greater impact of price rises on the poor (Levinshon *et al.* 1999). In a summary analysis of the impact of the Asian crisis, Pangestu (2000) and Knowles *et al.* (1999) found that over 1997-98 inequality dropped marginally in Indonesia and rose in Thailand, the Philippines and South Korea.

Figure 3
Trends in the Gini coefficients of the distribution of gross income in Thailand (higher curve with dark dots starting in 1962) and net income in Taiwan (the descending arm continuing in the lower curves), 1953-97



2.6 The late liberalizers of South Asia

The Washington consensus has been slow to come to the region, and until the early 1990s all South Asian countries followed rather inward-looking policies. India, for instance, launched its first IMF stabilization programme in July 1991, while partial deregulation, trade liberalization and privatization were introduced only in subsequent years. By and large, during the post-World War II period, income distribution in the region changed less than elsewhere, but it too followed a mild U-pattern. In India, the Gini coefficient of household consumption expenditure fell from 0.36 to 0.31 over 1951-61 as a result of the limited land reform of those years as well as affirmative action in favour of low caste groups. It then broadly fluctuated in the 0.29-0.32 range until the onset of the stabilization

and gradual liberalization in 1991. In the 1980s, stable inequality, substantial expenditure on rural development and rapid agricultural growth (which rose to 4 per cent up from 1.8 per cent in the prior decade) reduced rural poverty from 50-55 to 35 per cent (see Jha 2003).

In the 1990s, the years of the gradual external and internal liberalization, GDP growth reached a respectable 5.6 per cent a year. Such growth was, however, far more concentrated in the urban sector, by region and income group. Urban inequality rose moderately from 0.34 to 0.36,[3] thus reducing urban poverty only from 33 to 28 per cent between 1991 and 1997. Rural poverty, in contrast, stagnated owing to slow agricultural growth, retrenchment of rural development programmes and a rise in inequality (Mundle and Tulasidhar 1998, see also Jha 2003), and it is likely to have risen among agricultural labourers. To start with, the demand for labour and rural wages fell because of the slow agricultural growth. Poverty was also affected by cuts in public expenditure on rural infrastructure and food subsidies, and the government decision to raise food prices by 35 per cent in the outlets of the public distribution system (to which rural poverty is very sensitive). In sum, the experience of the 1990s points to a moderate rise in both urban and rural inequality, a larger rise in overall inequality due to a widening of the average urban-rural gap, and a decline in the poverty alleviation elasticity of overall growth (Ravallion and Datt 1999).

In Sri Lanka, Bangladesh and Pakistan, the inequality trend followed a typical, though little pronounced, U-shaped pattern. In Pakistan, the Gini coefficient declined moderately from 0.39 to 0.33 during the growth years of 1963-73 but gradually climbed back to reach 0.41 in 1993 (Banuri *et al.* 1997; Oshima 1998). The U-shaped pattern is more evident in the rural sector where an initial drop of 7 Gini points was followed by a rise of 12 points. Banuri *et al.* (1997) suggest that inequality rose during spells of slow growth and declined during periods of expansion and that social policies had only a limited impact on inequality. An unfavourable shift in the ratio of the rural wage to food prices and a rise in the share of GDP absorbed by interest payments on the public debt were other relevant factors.

2.7 Sub-Saharan Africa: falling urban-rural gap, but rising intraurban and, at times, intrarural-inequality

The limited statistical information on income inequality available for this region indicates that in the past overall inequality was the product of the large urban-rural income gap inherited from the colonial era and reinforced by the 'urban bias' of policies introduced by the new governments (see Lipton and Eastwood 2003). In southern and eastern Africa, inequality was also due to high land concentration.[4] The 1980s, in contrast, were characterized by widespread adjustment programmes which aimed at reducing the urban-rural gap and stimulating growth and export orientation. These measures succeeded in

3 Many argue that such modest increases in inequality contrast with other economic trends (e.g. rising capitalization of the stock market) and is the result of the exclusion of new high-income groups from national sample surveys.

4 In countries such as Kenya, South Africa, Zimbabwe, Malawi, the Gini coefficients of land concentration is in the 0.6-0.8 range

liberalizing the economy, devaluing the real exchange rate (which fell on average by 30 per cent between 1980 and 1998) and opening African economies as the average import-export ratio to GDP rose from 51 to 62 per cent over the same years (Kayizzi-Mugerwa 2000). In spite of all this, growth remained modest at best and GDP per capita in the region stagnated with the exception of the years 1994-96. Even in the regional success stories of Mauritius, Uganda, Ghana and, lately, Ethiopia, the recovery remained fragile and donor-dependent while exports did not shift—with the exception of Mauritius—towards labour-intensive manufacturing.

The urban sector felt the hardest impact of adjustment policies. In several cases, the urban economy experienced both a drop in its domestic terms of trade and large income falls among most urban groups. While the urban economy generally deteriorated, the impact on the rural sector varied (Table 6). Intrarural inequality rose in countries characterized by high land concentration (as in Kenya) or a collapse of the food and inputs marketing arrangements (as in Zambia; see McCulloch *et al.* 2000) but it fell or remained constant in countries such as Mozambique and Uganda characterized by a peasant agriculture rebounding from years of civil strife (Addison 2003).

Table 6
Gini coefficients of the distribution of income in the rural, urban and overall economy

Country	Year	Rural	Urban	Overall
Côte d'Ivoire	1970	–	–	0.53
	1985			0.39
	1995			0.37
Kenya	1982	0.40	–	0.52 ('76)
	1992	0.49		0.58 ('84)
Mauritius	1986	–	–	0.40
	1991			0.37
Ethiopia	1989	0.41	–	–
	1994	0.46		
Tanzania	1983	0.53	–	–
	1991	0.76		
Nigeria	1986	–	–	0.37
	1993			0.42
Uganda	1989	–	–	0.33
	1992	0.33	0.43	0.38
	1998	0.32	0.37	0.36
Zambia	1991	0.56	0.45	0.56
	1996	0.49	0.47	0.52
	1998	0.52	0.48	0.51

Source: WIID; Kayizzi-Mugerwa (2000); Bigsten (2000); McCulloch *et al.* (2000).

3 Econometric analysis of trends in within-country inequality

The above review suggests that during the last two decades inequality increased—if from different levels and to different extents—in a good number of countries. These findings, however, run counter to some of the evidence found in the literature. Deininger and Squire

(1996: 583), for instance, note that 'Decadal averages of inequality indexes across regions ... are relatively stable through time, but they differ substantially across regions, a result that emerges for individual countries as well'. Another study comes to similar conclusions. After fitting linear trends to 49 country data, Li *et al.* conclude that ' ... there is no evidence of a time trend in 32 countries, or 65 per cent of our sample' (Li *et al.* 1998: 35). An examination of the estimation procedure followed by Li *et al.* suggests, however, that their conclusions are biased by the methodology adopted. To start with, some country trends are estimated on too few and poorly spaced datapoints and are bound to yield

Table 7
Trends in the Gini coefficients of the distribution of income [a from the 1950s to the 1990s
for 73 developed, developing and transitional economies

	Sample countries in each group	Share of population of sample countries	Share of world population	Share of GDP-PPP of sample countries	Share of world GDP-PPP
Rising inequality, of which:	**48**	**59**	**47**	**78**	**71**
Continuously rising	17	4	3	5	5
U-shaped	29	55	44	73	66
Rising-stable	2	0	0	0	0
Falling inequality, of which:	**9**	**5**	**4**	**9**	**8**
Continuously falling	6	3	3	7	7
Inverted U-shape	3	2	1	2	1
No trend	**16**	**36**	**29**	**13**	**12**
Not included in sample	–	–	20	–	9
Total	**73**	**100**	**100**	**100**	**100**

Source: Authors' calculations on the November 1998 version of WIID. WIID includes the 2,622 observations of the Deininger-Squire Database (1996 version) and 1,131 observations collected by UNU/WIDER.

Notes: [a The results presented in the table are based on the interpolation of 770 'reliable observations' (out of a total of 3,573 included in the WIID database) concerning the entire national economy of 73 countries for which at least seven well-spaced observation for the period 1960-95 or, at least, 1980-95 were available. These observations originate from documented and representative surveys of household incomes or expenditures, or of gross earnings, and broadly adopt the same definition of income or earnings and the same data collection methodology throughout the entire period analysed. The remaining observations included in the WIID database could not be used either because they were redundant, or because they did not concern the entire economy, or because some countries exhibited less than seven consistent observations over the period analysed, or because the data sources were poorly documented.

Out of 73 countries included in the analysis, 33 are developing, 18 from the OECD and 22 transitional economies. Except for Africa, these countries account for between 84 and 98 per cent of the population of all regions, and between 82 and 98 per cent of their GDP-PPP. For Africa, the five countries included in the analysis (see Table 8) account for 18 and 32 per cent of its population and GDP-PPP.

The data interpolated refer to 'per capita household disposable income' in 52 cases (gross in 28 cases, net in 17, unknown in 7), to 'per capita household consumption expenditure' in 9 cases; and to 'gross earnings in 14 cases (mostly economies in transition).

The trend in the Gini coefficients were interpolated on a country by country basis by means of linear, hyperbolic and quadratic functions so as to capture different trend shapes and possible trend reversals. The best results from these three types of interpolations were chosen on the basis of the combination of the best 't' and 'corrected R2' statistics. Where the t statistics of the estimated parameters of these functions were not significant at the 5 per cent level (and, for some ten countries, at the 10 per cent level), the country analysed was assigned to the group 'no trend'.

statistically non-significant trends.[5] Second, the datapoints were fitted only with linear trends, a functional form, which does not permit the capture of trend reversals. Third, their sample did not include most economies in transition, the majority of which witnessed sharp rises in inequality in the 1990s. Fourth, their timeseries stopped in 1991-93 and cannot therefore capture the impact of external liberalization in many countries. Fifth, in assessing the global direction of the changes in inequality, the country results were not weighted by the share of the sample countries in world population and GDP-PPP. Inequality trends were therefore re-estimated by means of an unbiased methodology on the basis of the World Income Inequality Database.[6] This allows us to increase the number of countries analysed to 73 and update the timeseries to 1995. The datapoints retained were interpolated country by country with linear and quadratic functions, so as to capture possible trend reversals. For each country, the 'best fit' functional form was chosen on the basis of the most significant t and F statistics and, as a subordinate criterion, the highest R2. The results of this regression analysis are summarized in Table 7. They confirm the conclusions arrived at on the basis of the review of country studies and sharply differ from those of Li *et al.* (1998). In fact, inequality was found to have *risen* in 48 of the 73 countries analysed, to have *remained constant* in 16 (including Germany and Brazil as well as countries such India, Indonesia and Tanzania—for which the recent trends discussed in Section 2 shows a rise in inequality). Only in nine small and medium-sized countries such as Honduras, Norway, Malaysia and the Philippines did income concentration decline over the long term. If these results are weighed by population size and GDP-PPP, these conclusions are strengthened (columns 2 and 4 of Table 7).

A comparison of the results in Table 7 with those of Li *et al.* (1998) indicates that the choice of the functional form used to interpolate the time trends explains over 40 per cent of the difference in the proportion of countries with rising inequality. Another 25 per cent is due to the increase in country coverage (from 49 to 73) while the extension in the timeseries explain another 30 per cent of the overall difference (Cornia with Kiiski 2001).

4 Summary of findings about inequality trends

The analyses in sections 2 and 3 lead us to the following conclusions:

- Income inequality declined between the 1950s-70s, although there were several exceptions to this rule in Sub-Saharan Africa and Latin America;

- Such a trend towards greater inequality was reversed over the last two decades in 48 of 73 countries included in Tables 7 and 8. As noted, the November 1998 version of the World Income Inequality Database only extends to 1995 and, because of this, the database does not reflect inequality changes occurring over 1996-2001, years which saw financial turmoil. If the countries that experienced inequality reversals after 1995 (India, Indonesia, South Korea, Tanzania and the Philippines) are then added to the

5 The time trend in Li et al. (1998) is statistically significant in 11 per cent of the countries with 4-5 observations, and in respectively 37 and 42 per cent of the countries with between 6-10 or more than 10 observations.

6 The WIID database has been developed by WIDER and is accessible on www.wider.unu.edu.

'rising inequality' category, then the number of nations experiencing a surge in income concentration over the last 20 years rises to 53 out of a sample of 73 countries.

– Out of the 29 countries showing a U-shaped trend in income inequality, the trend reversal took place in the mid 1970s in Sri Lanka and Thailand, the 1970s in the early OECD liberalizers, the early-to-mid 1980s in several Latin American countries, 1984 in China, 1985-90 in several European countries, 1989-92 in the European economies in transition and 1992-3 in Italy and Finland. These findings contradict the view that within-country inequality remained broadly stable over the post-World War II period.

Table 8
Summary of changes in income inequality in 73 countries, 1960s to the 1990s

	Developed	Developing	Transitional	Total
Rising inequality	12 countries: Australia, Denmark, Finland, Italy, Japan, Netherlands, New Zealand, Portugal, Spain, Sweden, UK, USA	16 countries: Argentina, Chile, China, Colombia, Costa Rica, Guatemala, Hong Kong, Mexico, Pakistan, Panama, Puerto Rico, South Africa, Sri Lanka, Taiwan, Thailand, Venezuela	20 countries: Armenia, Azerbadjian, Bulgaria, Croatia, Czech Rep., Estonia, Georgia, Hungary, Kazakstan, Kirgistan, Latvia, Lithuania, Makedonia, Moldova, Poland, Romania, Russia, Slovakia, Ukraine, Yugoslavia	48 countries
Constant inequality	4 countries: Austria, Belgium, Canada, France	10 countries: Bangladesh, Brazil, Côte d'Ivoire, Dominican Rep., El Salvador, India, Indonesia, Senegal, Singapore, Tanzania	2 countries: Belarus, Slovenia	16 countries
Declining inequality	2 countries: Germany, Norway	7 countries: Bahamas, Honduras, Jamaica, South Korea, Malaysia, Philippines, Tunisia	0 countries	9 countries
All	18 countries	33 countries	22 countries	73 countries

Source: Authors' compilation on background material prepared for Cornia with Kiiski (2001). All data come from WIID.

Notes: The length of the timeseries and the number of observations vary from country to country. For the countries underlined, there is very recent information (not yet included in the WIID database) that inequality has been rising over 1996-2000 (see Cornia with Kiiski 2001).

4.1 The intensity of the rise

The increase in the Gini coefficients during the period examined varied substantially. Of the 48 countries with rising inequality in Table 7, the change was less than 5 Gini points in

six countries, between 5–10 points in 30 nations, between 10–20 points in 10 countries and more than 20 points in a few former Soviet Union transitional economies (Table 9). By the mid-to-late 1990s, 46 of the 73 countries analysed had Gini coefficients greater than 0.35-0.40—a threshold beyond which growth and poverty alleviation may start to be affected.

Table 9
Transition matrix of Gini coefficients for 73 countries between 1980 and the latest available year (mid-to-late 1990s)

Latest Gini Gini 1980 (or closest year)	<25	25.0-29.9	30.0-34.9	35.0-39.9	40.0-44.9	45.0-49.9	50.0-59.9	>60.0	Total
<25	TTT O	TT O	TTTT O	TTTT	T	T			18
25.0-29.9		T OOOOO	TT R		TT O	T			13
30.0-34.9		R	OOO RR	OO R T	OO R				13
35.0-39.9				RRRR 00	RR L	L	R		11
40.0-44.9				RR	RR	LL	R LLL		10
45.0-49.9				R	R		R L		4
50.0-59.9						R	LL	L	4
Total	4	10	13	17	13	6	9	1	73

Source: Authors' elaboration on WIID.

Notes: T = transition economies, O = OECD, L = Latin America, R = Others. Gini coefficients have been harmonized in terms of net income terms by adding one extra point to expenditure data and subtracting 5.5 points to gross income data.

4.2 Sources of the rise in overall income inequality

The recent debate on inequality focuses overwhelmingly on market-determined changes in wage differentials by skills and ignores the changes arising from changes in factor shares and in redistribution through tax and transfer systems. In countries with a developed wage economy, the recent upswing in income inequality seems to have been driven by a fall in the labour share and a corresponding rise in the capital share as well as by a surge in earnings dispersion unexplained by increases in returns to education but attributable to market distortions, the decline in minimum informal sector and public sector wages, growing wage arrears and the abandonment of traditional remuneration norms. In a few countries, income concentration appears to have been also due to rising regional disparity (as in China and Thailand). The weakening of redistribution following the reform of the tax and transfer system and the boost in land and financial rents also contributed, if less crucially, to the recent rise in inequality.

5 Rising inequality and poverty reduction

The widespread rise in inequality discussed above has affected the achievement of the poverty reduction objectives adopted by the international community in the early 1990s. The *World Development Report* 1990 (World Bank 1990: Table 2) projected that the total number of people surviving on less than PPP$1 per day would have fallen from 1,125 to 825 million between 1985 and 2000. Yet, the Bank's 2000 assessment of poverty trends in the 1990s (World Bank 2000) indicates that such a target was missed by a considerable margin, as the number of worldwide poor was estimated at 1.214 million in 1998. If China is removed from the sample, the results appear even less satisfactory both in terms of poverty incidence—as the world poverty rate declined between 1987-98 by only 2.3 percentage points (i.e. by an average of only 0.2 percentage points a year)—and of the absolute number of the poor, which increased by 100 million. At such a pace, the DAC poverty target of reducing the incidence of poverty to 15 per cent by 2015 will be very difficult to reach. While countries such as China and a few others will reach this objective well before 2015, on current trends this target will remain out of reach for many others. Hanmer and Naschold (2001) estimate that if the 4 per cent growth in GDP per capita estimated for the years 2000-15 for the developing countries as a whole (World Bank 2000) is accompanied by medium inequality (i.e. Gini coefficients of less than 43), then the DAC target can be met. In contrast, if the projected 4 per cent growth is associated with higher Gini coefficients, then by 2015 the overall poverty rate for the developing and transitional economies taken together will still be in the vicinity of 20 per cent. In the high inequality scenario, the DAC poverty target will only be met if the growth rate of income per capita reaches a historically unprecedented 9 per cent a year.

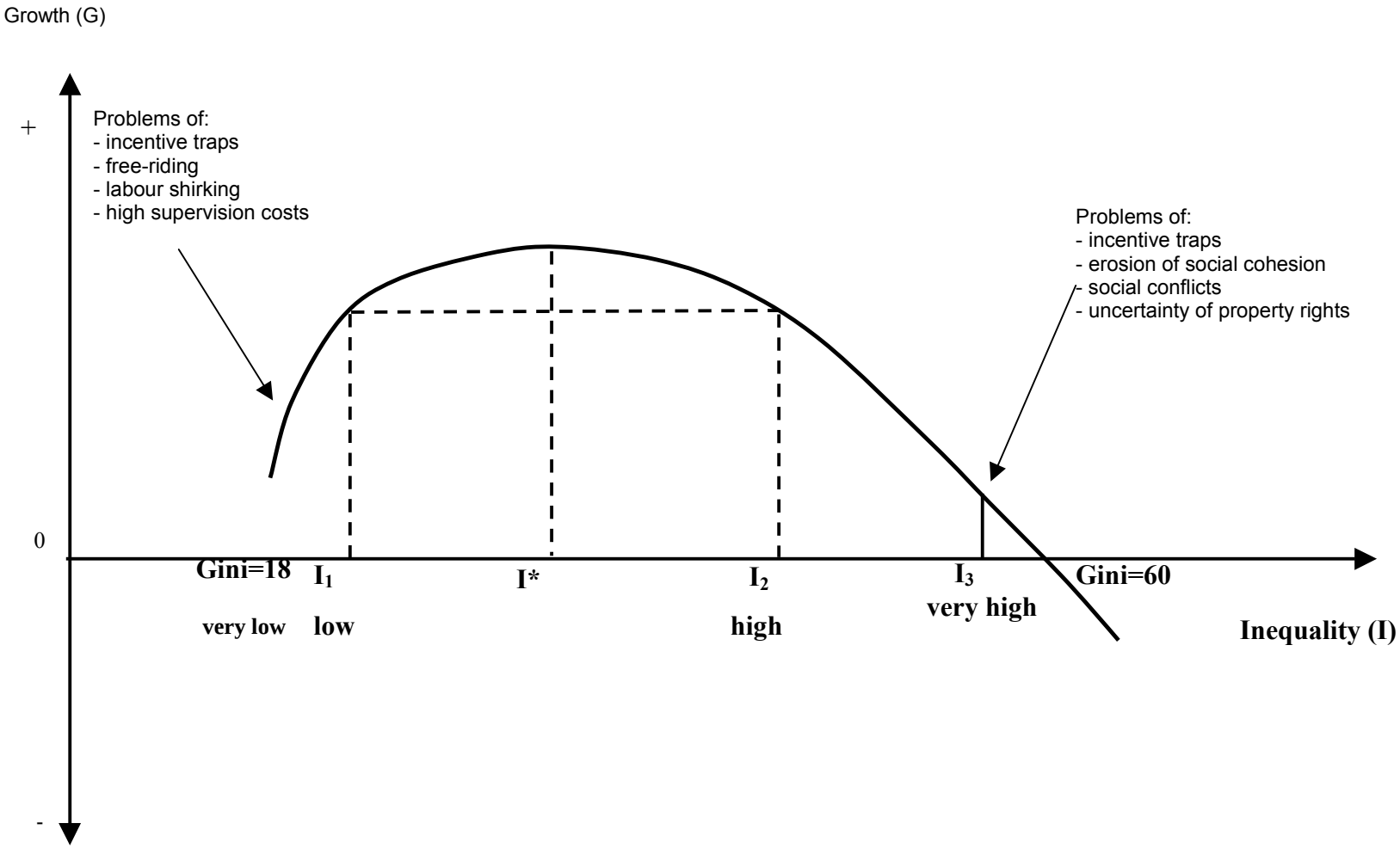
That higher inequality does not help in reducing poverty in countries affected by rising inequality is also evident from the data in Table 10. The table refers to a large number of growth spells and shows that poverty rates rose in 43 per cent of cases (due to falling average income per capita and worsening inequality) and declined sharply (at 9.6 per cent a year on average) in 27 per cent of cases when a rise in income per capita was combined with a drop in inequality. It also shows that increases in income per capita *per se* did little to reduce poverty if accompanied by a surge in inequality (upper right quadrant of Table 10).

Table 10
Changes in poverty headcount ratios in 117 growth spells for 47 developing countries over the 1980s and 1990s

		Average household income/per capita	
		Falling	Rising
Income inequality	Rising	(17 % of cases) poverty **rising** at 14.3 % per year	(30 % of cases) poverty **falling** at 1.3 % a year
	Falling	(26 % of cases) poverty **rising** at 1.7 % a year	(27 % of cases) poverty **falling** at 9.6 % a year

Source: Ravallion (2001).

Figure 4
Non-linear relation between inequality and growth



6 Rising inequality and the pace of growth

The last decade has seen a blossoming of analyses of the inequality-growth relationship. Space limitations do not permit a review of them here—see instead Benabou (1996) and Addison and Cornia (2001) for a review of this literature. Yet, it is important to stress that all major new models on the inequality-growth relation—such as the new political economy models (Alesina and Rodrik 1994), the models focussing on capital market imperfections (Aghion *et al.* 1999), the social conflicts and political instability models (Venieris and Gupta 1986) and those concentrating on policy distortions and government failure (Alesina and Drazen 1993; Birdsall 2000)—posit a *negative linear relation* with growth over the entire income inequality range. The linearity of such a relationship is however counterintuitive. It is difficult to believe that a shift in the Gini coefficient from, say, 0.20 to 0.25 has the same impact on economic performance than one from 0.50 to 0.55. In addition, the sign of the relation between inequality and growth may change at different levels of inequality. Because of this, the approach proposed hereafter posits that the relationship between growth and inequality is concave, taking the form described in Figure 4. Benabou (1996) and Banerjee and Duflo (2001) arrive at similar conclusions, if for different reasons, about the concavity of the inequality-growth relation.

In our approach, 'too low' or 'too high' inequality can, *ceteris paribus*, be detrimental to growth, which remains broadly invariant within a given growth-maximizing range. Such a range varies across countries depending on structural factors such as asset distribution, the share of agriculture in total output, natural resource endowment, the history of past policy decisions and, thus, the accumulation and sectoral distribution of physical and human capital. Two main arguments underlie the concavity of the inequality-growth relation. First, let us assume a latent 'natural distribution of income rewards'. Under conditions of equal opportunities, such a latent distribution reflects the distribution of talent, effort and merit, possibly corrected by social norms about the under-remuneration of the very talented and the over-remuneration of the least talented workers. Such a latent distribution is unobserved by the policymaker but the economic agents perceive whether their position in the real distribution broadly corresponds to their relative effort, talent and merit.

The real distribution of income often differs significantly from the latent one due to the market imperfections and differences in the distribution of endowments. When the real income distribution is too compressed and only poorly reflects differences in talent, merit and effort, growth may be inhibited by a weakening of individual work incentives, by attempts at labour shirking and free-riding and by the search for a 'quiet working life'. Soviet-type pay arrangements, for instance, appear to have caused serious work disincentives, erosion of work discipline and poor performance among workers and managers. Incentive loss can also occur if workers are subject to very high marginal tax rates (either via the state or by within-community mechanisms), the depressing effect of macroeconomic instability or some combination of these mechanisms. Thus, growth suffers if inequality is artificially compressed and falls below I_1 in Figure 4.

Conversely, as inequality rises there comes a point, I*, at which the growth-inequality relationship starts to turn negative and, from inequality level I_2 onwards, growth turns sharply negative, as the observed distribution of income deviates markedly from the latent distribution of rewards based on talent, merit and effort. This mainly happens because of the malfunctioning of labour, capital and product markets, or because of unbalanced access to education, land, credit and insurance or by sheer discrimination and segregation.

This case is also characterized by an erosion of incentives which may lead to output contraction among the self-employed and to shirking and free-riding among dependent workers. In all cases where the output of the latter is not easily monitorable, the erosion of incentives deriving from large differences between the 'latent' and the 'real' distribution of rewards entails the introduction of costly labour-monitoring arrangements which depress economic efficiency.

The empirical literature offers a number of microeconomic examples of such negative incentive effects. In labour surplus agriculture, for instance, high land concentration is generally associated with an inefficient use of labour, shirking by agricultural workers, high monitoring and supervision costs and, as a result of all this, low yields per hectare and total factor productivity (Cornia 1985). A high degree of asset concentration and landlessness may also force the poor to behave in ways that harm growth over the long term as observed in the case of over-exploitation of forests, pasture and fisheries.

Low industrial wages, or large wage differentials unexplained by productivity differentials, could erode work incentives, increase shirking and supervision costs and reduce efficiency in manufacturing as well. Large industrial firms relying on salaried workers generally face higher shirking and supervision costs than small firms where the distribution of rewards may be better aligned with that based on effort and talent and where, in any case, supervision costs are lower. In turn, in workers' cooperatives which rely on peer-group supervision, incentive structures are generally better and labour shirking is lower. But even these enterprises are not immune from incentive problems. For instance, Banerjee *et al.* (1998, cited in Banerjee and Duflo 2001) show, using panel data from sugar cooperatives in India, that the most unequal cooperatives are the least productive, with differences in output per capita of more than 50 per cent between the most and least egalitarian ones.

The erosion of work incentives described above can be accompanied by a weakening of 'the social contract' alluded to earlier when discussing social conflicts models. When the gap between rich and poor widens substantially, rent-seeking, predatory and criminal activities rise. This increases transaction costs for business security and contract enforcement, while eroding the security of property rights. For instance, Fajnzylber *et al.* (1999) find evidence that high income inequality is consistently associated with high violence levels across countries. In turn, Bourguignon (1998) and others measured the growing economic cost imposed on society by such violence in terms of lives lost, medical costs and resources diverted from productive uses to prevent and repress criminal activities.

Figure 4 suggests that a moderate surge in inequality from a level lower than I_1 can improve incentives, accelerate growth and contribute to poverty reduction.[7] Second, any country that intends to maximize poverty reduction within the growth-invariant inequality range should choose a lower level of inequality—I_1 over I_2 for example—as the former is associated with a higher poverty alleviation elasticity of growth than the latter. Finally, in the interval I_1-I* the inequality level that optimises poverty reduction varies in line with the slope of the curve. Further increases in inequality past I_1 are efficient as long as the growth-enhancing effect of higher inequality is greater than the decline in the poverty

7 But an inequality level lower than I_1 might be chosen if society values lower inequality per se.

alleviation elasticity of growth due to a rise in inequality. Policywise, it is therefore necessary to identify for each group of countries an 'efficient inequality range' within which both growth and poverty reduction are maximized. In contrast, beyond I_2 there is both growth collapse and increasing poverty.

6.1 An econometric test of the non-linear relation between inequality and growth

We regressed by means of OLS with heteroschedastic correction the point-to-point changes over 1980 and 1998 (or most recent year) in the Gini coefficients ($\Delta Gini_{80\text{-}98}$) of the 73 countries analysed in sections 2 and 3 on the average GDP growth rate realized over this period ($G_{80\text{-}98}$). The data were interpolated using both a linear function (numerical results not shown) and a quadratic function. The latter appears to fit substantially better the data than the former and identifies a statistically significant concave relation in $(\Delta Gini_{80\text{-}98})^2$ that explains a satisfactory 57 per cent of the total variance in growth performance. The linear term $\Delta Gini_{80\text{-}98}$, in contrast, is almost equal to zero and has the wrong sign.

$$G_{80\text{-}98} = 4.52\ (11.67) - 0.0004\ (0.00)\ \Delta Gini_{80\text{-}98} - 0.410\ (8.69)\ (\Delta Gini_{80\text{-}98})^2$$

R-squared = 0.57, no. of obs =73

This estimate suggests that, on average, the countries that experienced large increases in income inequality are likely to have suffered a slowdown in growth. There were, of course, important exceptions to this rule, as illustrated by the case of outliers such as China which experienced fast growth despite a surge in inequality. As noted in section 2, however, this was mainly due to a rise in inequality across regions which is less likely to erode incentives and social cohesion and not to a surge in vertical inequality within all regions.

Inspection of Figure 5 indicates, however, that the concave shape of the relation is due to the behaviour of the former socialist countries of Europe which—because of the one-off systemic changes entailed by the transition—recorded much larger falls in GDP per capita than other countries experiencing similar rises in Gini coefficients. To control for this and similar systemic shocks—such as the 1980s debt crisis in Latin America—we expressed the average country change in GDP per capita over 1980-98 as an index number (with 1980 GDP/c =100) and divided the value of the national index numbers so obtained for the regional average for the same indicator. In this way, we obtained a standardized growth measure ($SG_{8\text{-}98}$) which takes into account the varying country exposures to regional shocks. Repeating the regression using the 'standardized growth' variable improves the estimate of the inequality-growth relation. To start with, the variable $\Delta Ggini_{80\text{-}98}$ now has the correct sign and its parameter is significant at the 83 per cent level. In addition, the parameter of the quadratic term declined substantially in relation to the prior formulation, a fact that reduces the steepness of the right arm of the function. In contrast, the fit of the data worsened

$$SG_{80\text{-}98} = 1.040\ (42.37\ ) + 0.008\ (1.38)\Delta Gini_{80\text{-}98} - 0.0012\ (3.69)\ (\Delta Gini_{80\text{-}98})^2$$

R-squared = 0.18, no. of obs =78

Figure 5
Linear and non-linear relation between changes in Gini coefficients over 1980 and 1998 (or relevant subperiod) and changes in growth performance over the same period (or relevant subperiod)

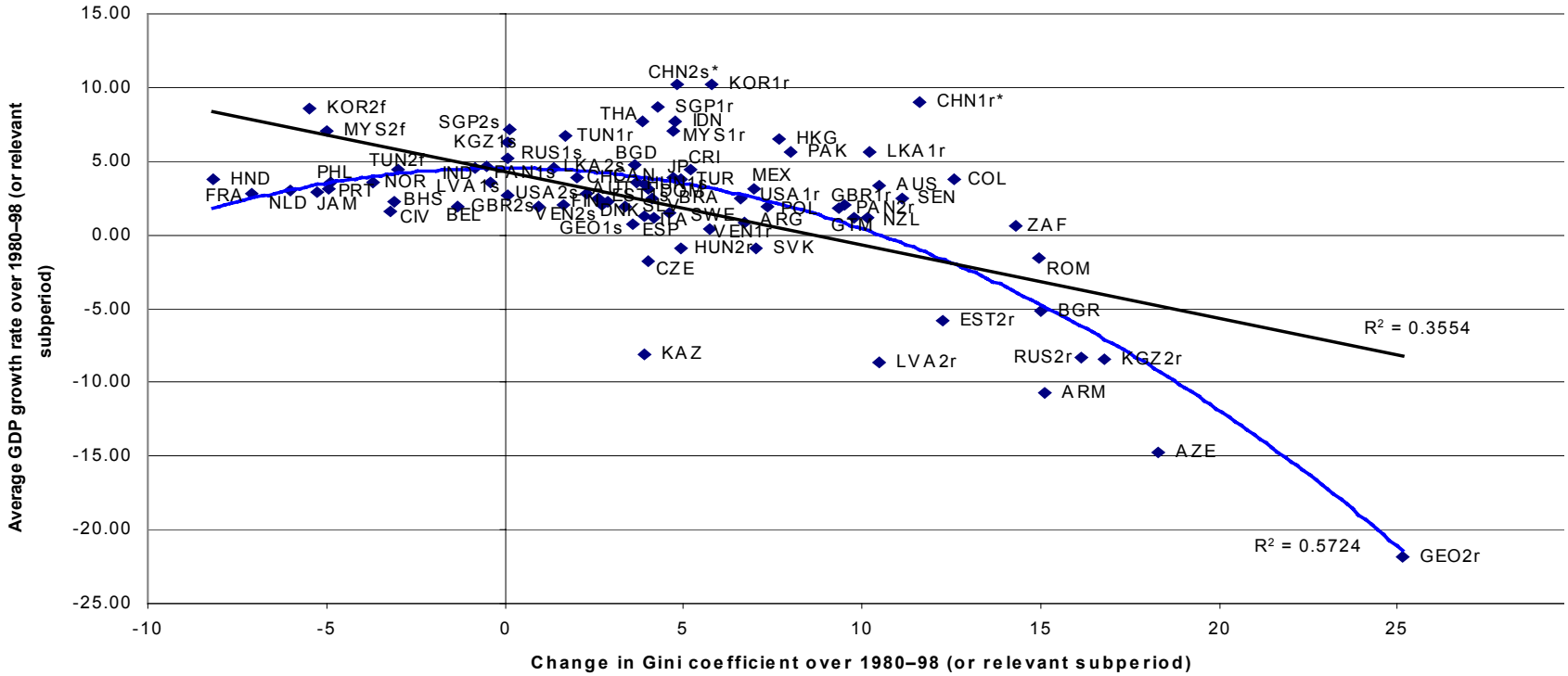
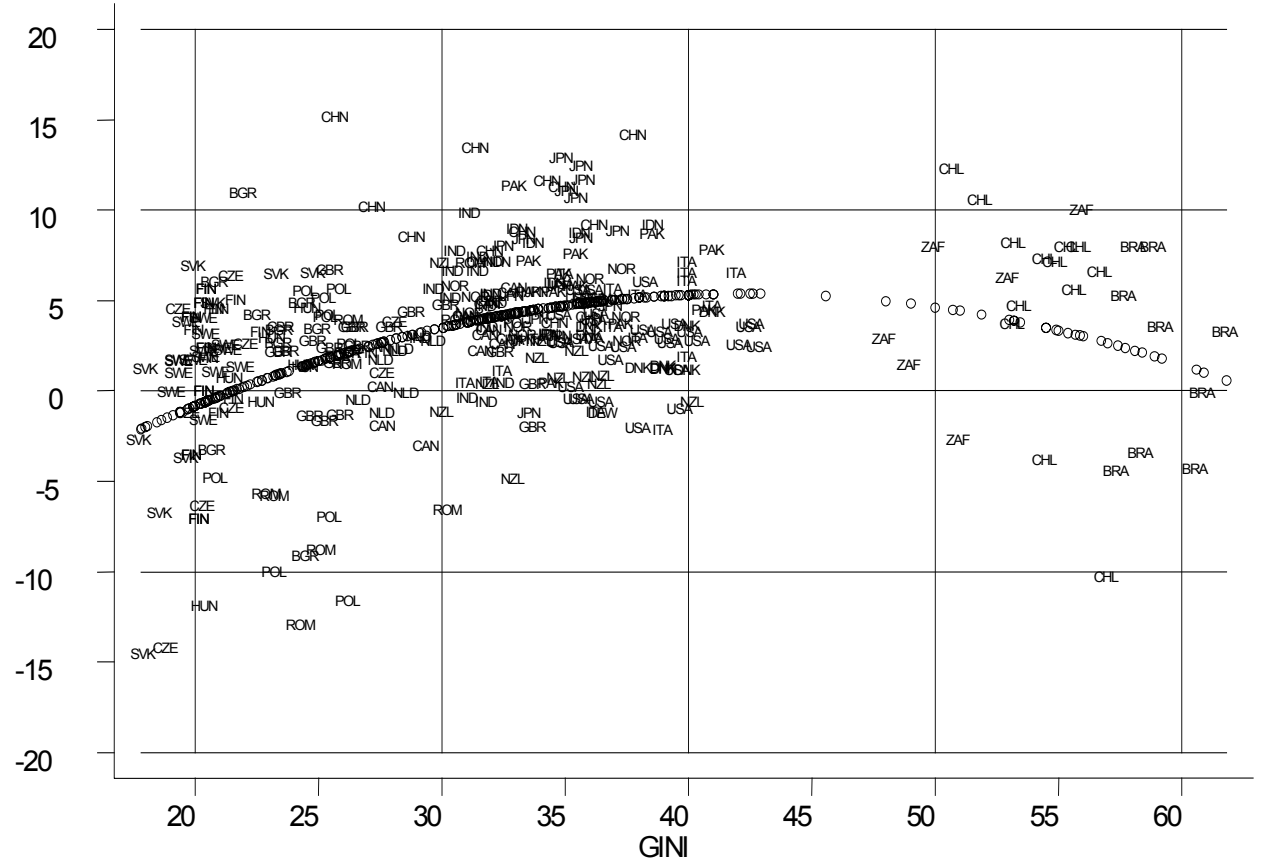


Figure 6
Annual percentage growth of GDP, constant 1995 USD (versus [vertical axis] the level of the Gini coefficient of distribution of income [horizontal axis])



Even after these corrections, this model still suffers from some specification problems. First of all, equal increases in inequality from different initial levels are likely, ex ante, to generate different impacts, a fact that is not captured by the above specification. The second problem concerns the direction of causation, a typical problem when dealing with synchronous cross-sectional data. A solution to this problem requires lagging the dependent variable, a change that could not be introduced given the cross-sectional nature of the data available.

To solve these problems we tested the relation between inequality and growth on a panel of 325 observations for 12 developed nations, 6 transitional economies and 7 large developing countries (Brazil, Chile, China, India, Pakistan, South Africa and South Korea) for which at least seven well-spaced observations covering the years 1960-98 that were available in the WIID database. Several estimation techniques were utilized to fit the relation $G_t = a + bGini_t - cGini_t^2$. All of them yielded similar and significant coefficients (not shown). Figure 6 presents the scatterplot of the above relation fitted with the estimate of such a quadratic function computed through a GEE panel data estimator with country-specific effects accounting for different average growth levels and Gini concepts. This estimation procedure is relatively robust to misspecification of the covariance matrix, an important issue when dealing with inequality datasets. The concave relation depicted in Figure 6 shows that the growth rate of GDP rises on average by up to 5 points when the Gini coefficient rises from 15 to 30. Within the range 35-45 of the Gini coefficient, the average rate of growth is broadly invariant at around 5 per cent a year. Between 45 and 50 Gini points, the GDP growth rate declines by one per cent, while another 4 percentage points of GDP growth vanish by the time the Gini coefficient reaches 60.

Similar results were arrived at by Barro (2000) who—after imposing all the necessary controls—found a significant *negative* relation between inequality and growth in countries with a GDP per capita of less than 2070 (in 1985 US$) and a significant *positive* relation in countries with a GDP per capita higher than the threshold. The countries covered by the first relation broadly correspond to the high inequality countries in Figure 6 (for which the relation is clearly negative) while the second corresponds to the low inequality countries in Figure 6 (for which an increase in inequality is clearly pro-growth).

The results in Figure 6 provide initial support to the hypothesis that the relation between inequality and growth is concave but several essential improvements are still necessary. Among them: the inclusion of controls for convergence in GDP and other unobserved effects correlated with GDP per capita, of the initial level of GDP per capita (GDP/c_0) and a dummy for former Soviet Union countries; the lagging of the dependent variable; the averaging of the variables over quinquennial periods to reduce noise; and the inclusion of more developing countries. Most importantly, the model needs to be tested on microdata to isolate the specific incentives and social effects which lie behind the concave relation I-G. All in all, the above empirical tests do not provide conclusive evidence but nevertheless should encourage us to dig further in this direction. A more complete testing of this relation might, in fact, substantially modify the political economy in this crucial area.

7 Conclusions: in search of policies for egalitarian growth and poverty reduction

While excessive egalitarianism stifles incentives and thus poverty reduction through growth, high inequality has a similar and more pronounced effects. For this, a genuine attempt at alleviating poverty requires addressing both the traditional causes of high inequality as well as the sources of inequality that might be related to globalization and liberalization.

Much remains to be done to remove the sources of inequality analysed in certain chapters of Cornia (2003).[8] A first step to achieve this objective would be implementing an agrarian reform in an incentive and power-compatible manner. The redistribution of large farms, plantations and state-run farms to the landless and poor smallholders can improve both equity and efficiency in rural areas and raise urban unskilled wages which are often held down by the excess supply of landless labourers. Second, it is essential to rebuild human capital by refocusing public spending and mobilizing more revenue through progressive taxation. The present distribution of public spending and taxation in many countries is neither conducive to growth or poverty reduction. The fiscal system often distorts economic incentives, and contributes to an excessively high level of income inequality, damaging both growth and poverty reduction. Similarly, tax systems need institutional investment to provide the revenues to subsidize human capital formation among the poor. A third important policy measure is the correction of market failures in credit and insurance markets. Microcredit programmes are doing much to raise the incomes of the poor, especially among rural women. Less attention has been given to the development of insurance markets for smallholders and microentrepreneurs that would enable them to insure against both household-specific and covariant shocks. Finally, there is an urgent need to control regional and ethnic inequalities that cause poverty and social conflict. Urban and ethnic bias has been prevalent in public spending and public employment in countries such as Guatemala and apartheid South Africa. This has exacerbated horizontal inequality, leading to adverse growth effects through social conflict and localized violence.

Some of the recently observed rises in inequality are due to the way Washington consensus policies have been conducted. Policy aiming at targeting poverty and the efficient inequality range will therefore need to introduce changes in this area as well. One first step is to design stabilization to avoid sharp compression in aggregate demand and pro-poor public spending. Stabilization can be undertaken in different ways, some of which are more protective of the poor than others—for example reducing the fiscal deficit by mobilizing more public revenue to maintain pro-poor public spending or avoiding large rapid reductions in inflation rates below levels that have no discernible benefit for growth (Bruno and Easterly 1998)—while it does adversely affect income inequality and poverty through the recessions that it triggers. A second essential measure consists of investing in basic and technical education to raise the supply of skilled labour and thus spread the benefits of trade liberalization and technology investment more widely. East Asia's success in human capital investment illustrates one of the preconditions that needs to be met if countries wish to achieve global competitiveness and pro-poor growth. Third, the occurrence of financial crises and thereby sharp recession-induced rises in inequality need to be avoided. Premature financial liberalization, in the context of weak prudential

8 In particular, Chapters 3 to 5 and 12 to 16 (Cornia 2003).

regulation has caused major crises in emerging economies but is also evident in low-income countries. Financial crises have large social costs. The social benefits of reducing output volatility are therefore considerable. IDB estimates that in Latin America, a three percentage point reduction in the volatility of real GDP growth would reduce the Gini coefficient by about 2 percentage points (IDB 1998: 100). In the absence of international action, national action must be taken. This includes strengthening prudential regulation, as well as the introduction of controls on destabilizing short-term capital flows. Finally, privatized enterprises need to be regulated. Realizing the social gains of privatization, depends upon careful design of privatization itself, effective post-privatization regulation and investment in an appropriate legal framework. While privatization is now a 'done deal' in many countries, regulation is the key entry point for getting equity objectives into policy. Privatized utilities illustrate the issues. With the privatization of state-owned utilities, the service access of the poor may improve after privatization if substantial capital is invested. But, in practice the service provided by privatized utilities to the poor has been mixed, leaving the poor, particularly in rural areas, with the worst access and services.

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