Preliminary draft for discussion only

Industrialisation, Employment and Poverty

Prema-chandra Athukorala
Arndt-Corden Department of Economics
Crawford School of Public Policy
Australian National University
Prema-chandra.athukorala@anu.edu.au

and

Kunal Sen
Institute for Development Policy and Management
School of Environment and Development
University of Manchester)
Kunal.Sen@manchester.ac.uk

Industrialisation, Employment and Poverty

Introduction

Industrialisation[1] is an important driver of employment growth and poverty reduction in developing countries. At the early stage of transition from an agrarian economy to a modern economy, the manufacturing sector in the typical developing economy has greater potential to absorb surplus labour compared to the services sector, which in the typical low-income country is dominated by informal services. While it is feasible to move unskilled workers from agriculture into better-paid jobs in manufacturing activities, it is not feasible to move them into the formal services sector. Formal services sectors such as banking, insurance, finance, communications, and information technology are characterised by relatively low employment elasticity and also employment in these sectors requires at least upper secondary school level education. Unskilled workers can find employment only in only in informal services such as retail trade and distribution, passenger transport and construction where wages and productivity are often low. By contrast, employment in manufacturing, particular in traditional labour-intensive industries such as clothing and footwear, require mostly on-the-job training.

As countries industrialise, workers are pulled out of low productivity agriculture to manufacturing, leading to both an increase in overall productivity in the economy as well as an increase in the share of workers employed in better paid jobs in manufacturing as compared to the subsistence income they may obtain in agriculture. The wage gains associated with industrialisation can play an important role in pulling significant proportions of the population out of poverty because in the typical low-income country labour is the only asset owned by the poor. In addition to these direct effects, industrialisation can also be crucial in reducing poverty indirectly through the economy-wide positive employment effect of economic growth (Lavopa and Szrimai 2013, Weiss 2013).

While it is generally recognised that industrialisation can potentially be a powerful force for employment generation and poverty reduction, the magnitude of the employment and poverty impact may differ by stage of economic development. At an early stage of

[1] In the standard national accounts terminology the term ‘industry’ encompasses mining, manufacturing, construction, and utilities (electricity, water and gas). Following the general practice in the literate on development economics we used this term specifically to refer to ‘manufacturing’; and the two terms are used interchangeably in the rest of the paper.

economic development, countries are more likely to specialise in labour-intensive industries, so that for low income countries, industrialisation can potentially have a strong positive effect on job creation and consequently, poverty reduction, under the appropriate policy environment. At higher levels of income, as countries start moving out of labour intensive industries and into capital and technology intensive industries, the direct effect of industrialisation on employment and poverty reduction will be weaker, though there may be strong indirect effects of industrialisation on poverty reduction, as the profits obtained from the growth of capital intensive industries are re-invested in the economy, leading to further economic growth and poverty reduction.

Although low income countries have a natural advantage in labour-intensive manufacturing because of the lower costs of labour, we observe that relatively few developing countries have had success in producing and exporting labour –intensive manufacturing products. It is mostly in the East Asia and South East Asian region, that we observe the success of countries in labour-intensive industrialisation. Several countries in these two regions, starting with Japan, then Korea, Singapore, and Taiwan, and more recently, China and Vietnam, have moved from the import substituting phases of their economic development to an export-oriented development strategy that involved a strong growth in the labour intensive segment of the manufacturing sector in the initial years (Riedel 1988, Haggard 1996, Krueger 1997, Perkins 2013). In all these countries, as their economies integrated more closely into world markets, economic growth and structural transformation (that is, a shift of employment from agriculture to manufacturing) went hand in hand, and surplus labour was pulled from less productive agriculture to the more productive manufacturing sector.

What explains the success of some countries in labour-intensive industrialisation and not of others? The relationship between industrialisation on one hand and employment and poverty on the other has been a matter of great interest both in the scholarly literature as well as in policy debates. In this paper, we first survey the literature relating to the debate on the relationship between industrialisation, employment and poverty. We then present some stylised facts of industrialisation and its employment and poverty reduction impacts. The final sections makes policy inferences.

Industrialisation, Employment and Poverty: The State of the Debate

The overall level of manufacturing employment in an economy is by definition equal to the level of manufacturing output times the weighted average employment coefficient for the manufacturing sector.

$$L = Q.\Sigma w_i (L/Q)_i \qquad (1)$$

where L is total manufacturing employment

Q is total manufacturing output

$w_i = Q_i/Q$

i refers to branches of manufacturing.

The relationship between industrialisation and employment can therefore be decomposed into three elements (1).[2] First, there is the direct effect of industrialisation on employment operating though the increase in the total output of the manufacturing sector (Q). Second, in the process of industrialisation, there may be changes in the shares of different industries in overall manufacturing output (w_i), increasing the output of labour-intensive sectors and reducing output of capital-intensive sectors. Finally, employment can increase by an increase in the labour coefficients, an increase in labour intensity of production, within industries $(L/Q)_i$.

Thus, achieving high manufacturing growth rates is not a sufficient condition for employment generation; employment impact of a given rate of output expansion depends on capital deepening in the production process at the individual industry level and shift in the product mix from relatively more labour intensive product lines to capital intensive product lines (Krueger 1983; Gutierrez, Orecchia et al. 2007). As we will discuss below the relative importance of these three components of industrialization-employment nexus is determined not only by the nature of the resource endowment of a given country but also by its policy regime choice.

In the 1950s and 1960s there was a broad consensus in the economics profession that the primary-commodity-dependent status inherited from the colonial era was the main cause

[2] There is also the indirect, economy-wide, effect of industrialisation on employment via input-output linkages, which we ignore for the time being.

of economic backwardness of developing countries. It was also believed that the gap in living standards between developed and developing countries would continue to widen because of both of an inexorable deterioration in the terms of trade against primary commodities and the slower growth of world demand for these commodities. Industrialization was therefore considered the key to economic development.[3] Apart from economic considerations, two important historical phenomena greatly influenced policy makers' thinking in favour of import-substituting industrialisation. The first was the strong nationalistic and anti-colonial sentiments that accompanied the attainment of independence; domestic manufacturing was of symbolic importance as a sign of national economic independence. The second inspiration came from the apparently successful rapid industrialisation in the Soviet Union under a command economy (central planning).

Since the domestic demand for most manufactured goods in these countries were historically met through imports, it seemed to follow logically that domestic production of manufactured goods, by taking over the 'ready-made' markets of imports was the main avenue for industrialization. Consequently, controls over import trade became the main policy instrument of planning for industrialization. Industrialisation through export-orientation was however not considered as a viable option. The consensus at the time was that given the "weakness" of domestic economic activities in these countries and their inability to compete with established industries abroad, industrialisation could not be undertaken without insulating the domestic economy from competition from established foreign industries (Myint 1965, 127-28). In most developing countries protection and other incentives were, therefore, automatic for any new import-substitution industry, without provision for reduction or removal of them after an initial period.

In the ISI policy advocacy during this period, the prime focus was on the expansion of manufacturing output; employment generation and poverty reduction was rarely mentioned as 'specific' objectives. This was because the widely-held view at the time was that manufacturing growth would automatically absorb surplus labour and this 'pull-up' force would help eradicating poverty[4] (Bhagwati 2005).

---

[3] For surveys of the relevant literature, see Baser and Herve (1966), Morawetz, D. (1974) Diaz-Alejandro (1975), Krueger (1997), Bruton (1998) and Pack and Saggi (2006)

[4] Theoretical underpinning for this view was provided by the celebrated surplus-labour model of Arthur Lewis (1954).

The case for import substitution industrialization (ISI) was so widely accepted at the time that 'developing-country exemptions' were even incorporated into the General Agreement on Tariff and Trade (GATT). The Article XVIIII(B) of GATT exempted the developing countries from the "obligations" of industrial countries, explicitly permitting them to adopt tariffs and quantitative restrictions as policy tools. The Bretton Woods institutions (the International Monetary Fund (IMF) and the World Bank) and other international organizations with commitment to economic development in developing countries also generally supported the basic thrust of the import-substitution policy (Krueger 1997).

The period from about the late 1960s has witnessed a decisive shift in development thinking and policy away from the entrenched import-substituting views and in favour of export-oriented (outward-oriented) industrialization strategy. This policy shift was brought about by a combination and interaction of two factors; the contrasting experiences of those developing countries that rigidly followed import-substituting policies and those that took the advantage of trade opportunities, and a substantial neo-classical revival in the trade and development literature based on these experiences and theoretical advances.

Many developing countries experienced rapid growth at the early stage of substituting domestic production for imports of consumer goods and other light manufactures. But, as these "easy" import-substitution opportunities dried up, further growth was naturally limited to the rate of growth of domestic demand, and that was not generally high in most developing countries. In almost every country, and particularly in small countries, import-substitution policies encouraged high-cost, inefficient activities that showed little productivity gains over time, partly due to their sheltered position in the domestic market. Import-substitution, which was rationalised as a means of reducing dependence on the international economy, in fact increased import dependence. Most of the newly established industries relied heavily on imported capital goods intermediate goods. To make matters worse, the protectionist policies pulled resources into high-cost import competing industries and discouraged export production. As a result, periodic foreign exchange shortages and 'stop-go-macroeconomic cycles' usually emerged with deleterious effects on output and employment (Baser and Herve 1966, Morawetz 1973).

Relating to equity considerations, manufacturing growth yielded the perverse outcome of regressive shifts in the distribution of income and disappointing performance in terms of

employment generation. In most countries the manufacturing sectors' rate of labour absorption fell behind the growth rate of labour force and in some cases manufacturing employment even declined in absolute terms as the balance of payments constraint put a limit on output expansion. Ironically some countries began to face a 'new' problem of massive urban unemployment because of the failure of new industries to absorb the surplus labour streaming into urban centres (Diaz-Alejandro 1975).

Against the dismal overall performance of import-substitution addicted developing countries, a number of countries in East Asia, in particular Hong Kong, South Korea, Taiwan and Singapore, which shifted early to export-oriented industrialisation (which involved removing bias in the incentive structure in favour of domestic market oriented production so that firms produce for exports as well as for the domestic market) moved dramatically upward on the income scale, with substantial improvement in their overall economic performance.[5] More importantly, rapid and sustained growth in these countries was accompanied by a remarkable equity outcome, more equal distribution of income and rapid reduction in poverty through impressive employment growth (Perkins 2013).

From the mid-1960s, a number of comparative multi-country research projects around the world probed the contrasting industrialisation and development experiences of export-orientated import-substituting countries.[6] Empirical evidence of these studies created greater awareness of the economic inefficiency and capital-intensity bias of ISI, and of the inherent growth-conducive traits of export-oriented regimes. It was revealed that most of the explanation for low labour absorption countries which followed ISI was underpinned by capital intensive production rather than by increase in the efficiency of workers (increase in labour productivity). Increase in capital intensity was observable even in some traditional industries which presumably were more labour intensive. At the same time there was a structural shift in the overall manufacturing product mix towards relatively more capital intensive industries. By contrast there was convincing incidence that the country which achieved an early transition from ISI to EOI recoded an impressive rate of labour absorption

[5] These four countries were subsequently joined by Malaysia, Thailand and Indonesia and China to form the country grouping of 'East Asian Miracle Economies' or High Performing Asian Economies' (HPAEs) (World Bank 1993).

[6] The main publications arising from these multicounty research projects are Little, Scitovsky and Scott (1970), Balassa (1982), Baghwati (1978), Krueger (1978) and Donges (1976).

as the cumulative outcome of faster output expansion and structural adjustment in manufacturing in line with the countries'' comparative advantage in labour intensive production. The latter reflected in both a shift in the industry composition towards new labour intensive product lines and increase in labour intensity of the existing industries.

Hand in hand with the appearance of these multi-country studies were considerable advances in the theoretical literature that scrutinised various aspects of the way in which protection actually works and the economic costs involved[7]. These theoretical advances not only provided more powerful tools for the anatomy of the consequences of controlled trade regimes but also gave credibility to the emerging empirical evidence on economic costs of such regimes.

Based on the experience and research, export-oriented industrialisation (EOI) became the new orthodoxy of development policy from about the late 1970s. This policy advocacy soon became an integral part of aid conditionality of the World Bank and the International Monetary Fund (IMF) and the major bilateral donors. This new ideological orientation (which became the cornerstone of so-called 'the Washington Consensus', a la Williamson 1994), coupled with the influence of aid conditionality, produced a palpable shift in industrial polices of many countries (including that of China and many countries in the former Soviet Bloc) towards greater reliance on export orientation. During the late 1980s and early 1990s, most of the Latin American countries that had favoured ISI since the 1930s, went through unilateral liberalisation reforms. Similar processes took place in Asia, where countries that have pursued highly protectionist policies for decades, including India are implemented major trade liberalisation efforts (Sachs and Werner 1995, Wacziarg and Welch 2008).[8]

After more than four decades of experience and research, the range of the debate over trade and industry policies in developing countries has undoubtedly been narrowed. It is now widely accepted that import substitution has outlived its usefulness and openness to foreign

[7] For a comprehensive survey of these theoretical advances with extensive references to the relevant literature see Corden (1996).

[8] For details on policy shifts in various countries see Chenery and Keesing (1981), Michaely *et al*. (1991, Chapter 2), Thomas *et al*. (1991), Edwards (1995) and Sachs and Warner (1995).

trade is "a friend of economic development and growth, not an enemy, as many policy makers and economists had feared in the immediate post-war period" (Rodrik 1995, 101).

With this broader consensus, the debate is now centered upon the question of how to tackle the challenges associated with a policy regime shift from inward-oriented to outward oriented trade regimes. The mainstream case for 'letting factor endowment speak' by getting product and factor prices right has come under attack from a strong revisionist school of thought, based on re-interpretations of economic transformations in the East Asia high-performing economics. These economists argue that market imperfection in the typical developing economy and "dynamic externalities" associated with infant industry protection really call for the "right kind" of intervention, and government intervention in the form of selective credit and other forms of promotion was an essential element in the success of Taiwan, Korea, Singapore and Japan (Amsden 1989, Wade 1990, Taylor 199, Rodrik 1992 & 1995). The revisionist view has gained added impetus from the lack-lustre outcome of market-oriented policy reforms undertaken in many countries in Latin America and the Sub-Saharan Africa over the past two decades (Edwards 2010).[9]

In a clear departure from the conventional wisdom, the World Bank, in its *World Development Report -1991* acknowledged that 'market friendly' intervention undoubtedly played a role in dramatic economic transformations in these countries. Then, in the context of the East Asian Miracle study, the Bank specifically mentioned that directed credit, an important instrument of industrial policy, may have made a substantial contribution to successful industrialisation efforts in both Korea and Taiwan (World Bank 1993).[10]

The mainstream economists, however, continue to stress that it was the firm commitment to outward orientation and relatively less reliance (by the developing country standards) on restrictive trade policies (rather than some isolated attempts to promote specific industries through selective incentives) that played the critical role in successful industrial transition in East Asian countries (Pack and Saggi 2006). In particular, they argue that the

[9] As Edwards has vividly illustrated, the revisionists often interpret the lack-lustre outcome as an inherent limitation of the main-stream policy advocacy, without paying adequate attention (or completely overlooking) the half-hearted nature of the actual reform process.

[10] See also Stiglitz (1996). As of late 1998, the World Bank is however re-examining the recommendations of the East Asian Miracle study, given the crisis in that region.

outstanding success of these countries was based on a phenomenal growth of labour-intensive manufactures (including light electrical and electronics machinery, largely consisting of consumer goods), not the typical 'heavy' sectors (chemicals, non-metallic minerals and base metals), which received favoured treatment (Krueger 1997, Little 1994). Various selective interventions, so the argument goes, were important only to the extent that they 'played an important role in making the export promotion strategy work successfully by ensuring credibility of commitment on the part of governments' (Bhagwati 1989: 260).

Industrialisation, Employment and Poverty: Stylized Facts[11]

In this section, we review the stylized facts of the outcomes of industrialisation, and in particular, its links with poverty and other development outcomes.

The available data on manufacturing employment and its *direct* contribution to total employment in 32 countries are summarised in Table 1. In most developing countries manufacturing employment is increasing in absolute terms, but manufacturing share in total employment has continuously increased only in a handful of countries. In 2005 (the latest years for which comparable data are available), the share of manufacturing in total employment varied in the rage of 10 to 20 percent for the bulk of the countries listed in the table; manufacturing accounted for more than 20 only in four countries (namely, Singapore, Malaysia, Italy and Taiwan).

For a meaningful discussion of the role of manufacturing in employment creation (and poverty alleviation), it is important to distinguish between the direct creation of jobs in manufacturing and the jobs created in other sectors as an outcome of the expansion of manufacturing production (indirect employment). For instance, in many countries a growing number of jobs are created in manufacturing related services such as warehousing, transport, and human resource management and information technology. In recent years, the rapid expansion of global production sharing has been a key driver of the expansion of these manufacturing-related services jobs. Growing importance of process foods in world trade has contributed to strengthening the linkages between manufacturing and the agricultural sector. There is convincing evidence that employment multiplier in manufacturing are usually much

[11] This section is incomplete.

higher than in the other sectors and one job in manufacturing generally creates two three jobs in the other sectors (Lapova and Szirmai 2012).

There are notable variations in labour productivity in manufacturing across developing countries (Table 2). For instance, labour productivity in Korea is by far the highest among countries for which we have data for in 2010 and labour productivity levels in Cambodia, Estonia and Lao PDR at less than 5 per cent the level of Korea's. The labour productivity of Azerbazian, the Czech Republic and Chile in the secondary sector is the closest to Korea's, yet the levels of labour productivity in these countries is less than half that of Korea's.

As already noted, different countries, even at similar levels of economic development, show very different rates of employment generation for a given rate of manufacturing growth. The employment intensity of manufacturing— the ratio of the percentage change in manufacturing employment to the percentage in manufacturing real output— provides a useful summary indicator of these inter-country differences. Table 3 reports this indicator both by major region and by five year periods, starting in 1965-1969 and ending in 2000-2004. The employment intensity of manufacturing is the lowest in Africa (in fact, negative) and the highest in East/South East Asia and Central/Eastern Europe.

As part of our on-going research, we have examined the patterns and determinants of employment intensity of industrialisation using a new panel data set covering 42 developing countries over the period 1970-2010. The preliminary findings points to a strong positive relationship between the openness of the trade policy regimes (as measured by the Sachs-Werner index) and the degree of employment intensity across countries: on average the degree of employment intensity is 20 per cent larger in countries with open trade policy regimes compared to the other countries. The degree of employment intensity, however, seems to correlate negatively with the levels of income, suggesting that countries shift away from labour intensive to capital intensive sectors in manufacturing in the process of economic development. We also find that employment intensity declines with higher levels of schooling, suggesting that with greater levels of human capital, countries tend to move to more capital intensive methods of production. Interestingly, so far we have not uncovered clear relationship between employment intensity the restrictiveness of labour regulations.

Finally, what is the relationship between industrialisation, economic development and poverty? There is a weak positive relationship between industrialisation and the level of economic development as measured by the per capita income (Figure 1). However, as can be seen in Figure 2, there is a much stronger negative relationship between industrialisation and income poverty, with countries that are more industrialised having lower poverty. This may be because industrialisation contributes to poverty reduction both directly (through increase in industrial output and employment) but also though economy-wide spread effects on the other sectors in the economy (as discussed before). Also, as we have already noted the poverty-reduction effect of industrialisation is likely to be greater in poorer countries. In contrast to the strong negative relationship between industrialisation and poverty, there is no clear relationship between industrialisation and income inequality as measured by the standard Gini coefficient (Figure 3).

Concluding Remarks

After more than four decades of development experience and research, the range of the debate over the appropriate policy for industrialization in developing countries has undoubtedly narrowed. There is a consensus that the early emphasis on "force" import substitution through protection and state intervention has outlived its usefulness and growth prospects in general and poverty alleviation though employment generation in particular are greatly enhanced by industrialization through greater integration into the international economy. Despite this broader consensus, the debate is now on how to manage the transition from import-substitution to export-oriented industrialization remains a contentious issue. The neo-classical (mainstream) economists by and large continue to argue that letting factor endowment to speak' through neutral incentives is way to achieve industrial success. By contrast the revisionists argue for an activist role for the state in the form of selective incentives.

The changes for improved outcomes in policy reforms in the future seem to hinge on policy makers' ability to craft policies by carefully taking into account structural peculiarities and policy history of individual countries while drawing on both schools of thought and the accumulated evidence of economic successes and failures in other countries. For semi-industrialized with a substantial reserves of entrepreneurial talents and a well-developed

human capital base getting factor and product prices right may be the appropriate recipe for achieving labour absorption though manufacturing expansion. For low-income countries which do not enjoy these preconditions, there may be a case for some government intervention in the form of providing well-targeted and time-bounds incentives.

References:

Amsden, A.H. (1989), *Asia's Next Giant: South Korea and Late Industrialization,* New York: Oxford University Press.

Athukorala, P. and S. Rajapatirana (2000), 'Liberalization and Industrial Transformation: Lessons from the Sri Lankan Experience', *Economic Development and Cultural Change*, 48(3), 542-572.

Athukorala, P. (2005), 'Outward-oriented Policy Reforms and Industrialization in Sri Lanka, *Economic Papers*, 26(4), 372-391.

Balassa, B. (1982), *Development Strategies in Semi-Industrial Economies*, Baltimore: Johns Hopkins University Press.

Baser, W. and M. Herve (1966), Employment and Industrialization in Developing Countries', Quarterly Journal of Economics, 80(1), 88-107.

Baser, W. and M. Herve (1966), 'Employment and Industrialization in Developing Countries', *Quarterly Journal of Economics*, 80(1), 88-107.

Bhagwati, J. (1988), "Bhagwati, Jagdish N. "Poverty and public policy." *World Development* 16 (1988), 539-555.

Bhagwati, J.N. (1978), *Anatomy and Consequences of Exchange Control Regimes*, Cambridge, Mas.: Ballinger Publishing Company.

Bhagwati, J.N. (1988), 'Export Promoting Trade Strategy: Issues and Evidence, *World Bank Research Observer*, 3(1): 27-52.

Bruton, H.T. (1998), 'A Reconsideration of Import Substitution', *Journal of Economic Literature*, 35(2), 903-936.

Diaz-Alejandro, C.F. (1975), 'Trade Policy and Economic Development', in P.B. Kenen (ed), *International Trade and Finance: Frontiers for Research*, Cambridge: Cambridge University Press, pp. 93-150.

Donges, J. (1976), 'A Comparative Study of Industrialisation Policies in Fifteen Semi-Industrial Countries', *Weltwirtschafliches Archiv*, 12(4): 626-59.

Fei, J., Ranis, G. and Kuo, S. (1979) *Growth with Equity: The Taiwan Case*, New York: Oxford University Press.

Gutierrez, C., C. Orecchia, P. Paci, P. Serneels (2007), Does employment generation really matter for poverty reduction?, *Policy Research Working Paper 4432*, Washington DC: World Bank.

Haggard, S. (1996) Lessons from Successful Reformers: Korea and Taiwan, *Economic Reform Today*, 2(1), pp. 15-22.

Krueger, A. O., (1978), *Foreign Trade Regimes and Economic Development: Liberalization Attempts and Consequences*, Cambridge, Mass.: Ballinger.

Krueger, A.O (1981), *Trade and Employment in Developing Countries: Synthesis and Conclusion*, Chicago: University of Chicago Press.

Krueger, A.O (1997) Trade Policy and Economic Development: What Have we Learned? *American Economic Review*, 87(1), 1-22.

Krueger, A.O. (1995) Trade Policies and Developing Nations, Washington, DC: Brookings Institution.

Lapova, A. and A. Szirmai (2012), Industrialisation, employment and poverty, UNU-MERIT Working Paper No. 81.

Lewis, W. A. (1954), "Economic development with unlimited supplies of labour.", *The Manchester school* 22(2), 139-191.

Little, I.M.D. (1994), 'Trade Liberalization Revisited', Pakistan Development Review, 33(4), 359-89 (Reprinted as Chapter 9 in I.M.D. Little (1999), *Collection and Recollections*, Oxford: Clarendon Press, 155-161)

Little, I.M.D., Scitovsky and M. Scott (1970), *Industry and Trade in Some Developing Countries: A Comparative Study*, Oxford: Oxford University Press.

Morawetz, D. (1974), 'Employment Implications of Industrialisation in Developing Countries: A Survey', *Economic Journal*, 84(335), 491-542.

Myint, H. (1965), *The Economics of the Developing Countries*, London: Huchinson University Library.

Nguyen, K. T. (2014), 'Economic Reforms, Manufacturing Employment and Wages in Vietnam', PhD Dissertation, Australian National University.

Pack, H. and K. Saggi (2006), 'Is there a Case for Industrial Policy? A Critical Survey', *World Bank Research Observer*, 21(2), 267-297.

Perkins, D. H. (2013), *East Asian Development: Foundations and Strategies*, Cambridge, MAS: Harvard University Press.

Riedel, J. (1988), 'Economic Development in East Asia: Doing What Comes Naturally?', in H. Hughes (ed.), *Achieving Industrialisation in East Asia* (Cambridge: Cambridge University Press).

Rodrik, Dani (1992), "The limits of trade policy reform in developing countries." *The Journal of Economic Perspectives*, 6(1), 87-105.

Rodrick, D. (1995), 'Trade and Industrial Policy reforms' in J.R. Berman and T.N. Srinivasan (eds.), *Handbook of Development Economics*, Vol. 111, Amsterdam: North Holland.

Sachs, J. D., A.Warner (1995), "Economic reform and the process of global integration." *Brookings papers on economic activity*: 1-118.

Taylor, L. (1991) 'Economic Openness: Problems to the Century's End', in T. Baruni (ed.), *Economic Liberalisation: No Panacea: The Experience of Latin America and Asia*, Oxford: Clarendon Press, 99-147.

UNIDO (2013), Sustaining Employment Growth: The Role of Manufacturing and Structural Change, Industrial Development Report 2013, Geneva: UNIDO.

Wade, R. (1990), *Governing the Market: Economic Theory and the Role of the Government in East Asian Industrialization*, Princeton: Princeton University Press.

Wacziarg, R. and K.H. Welch (2008), 'Trade Liberalization and Growth: New Evidence', *World Bank Economic Review*, 22(2), 187-231.

Weiss, J. (2013). "Industrial Policy for the Twenty-First Century: Challenges for the Future", in Szirmai, A., W.Naude and L.Alcorta, Pathways to Industrialisationin the Twenty-First Century: New Challenges and Emerging Paradigms, Oxford: Oxford University Press.

Williamson, J. (1994), 'In Search of a Manual for Technopols', in J. Williamson (ed.), *The Political Economy of Policy Reforms*, Washington, DC: Institute for International Economics, 9-24.

World Bank (1991), *World Development Report 1991*, New York: Oxford University Press.

World Bank (1993), *The East Asian Miracle: Economic Growth and Public Policy*, Oxford: Oxford University Press.

Table 1. Direct Employment in Manufacturing Across the World: Number of Workers and Share in Total Employment, 1985-2005

	Manufacturing workers (in thousands)			Manufacturing share in total employment (%)		
	1985	1995	2005	1985	1995	2005
All listed countries	219598	254026	279762	19	17	15
Advanced countries	61413	56309	49163	23	19	15
Australia	1129	1112	1054	16	13	11
France	4714	3815	3538	21	17	14
Germany	9768	8441	7515	29	22	19
Italy	5818	5169	5072	27	23	21
Japan	14390	13830	10979	24	21	17
Nederland	1035	1067	975	19	15	12
UK	5372	4212	3632	22	17	13
USA	19187	18663	16399	18	14	11
Latin America	17051	19318	21205	16	15	12
Argentina	2094	1907	1635	18	15	12
Brazil	7852	8292	9619	15	14	13
Chile	507	810	723	14	16	11
Colombia	1024	1678	1774	11	13	11
Mexico	4742	5618	6622	19	18	17
Venezuela	832	1018	832	17	14	10
Africa	2897	4924	7230	---	8	9
Ethiopia	---	577	1529	---	2	5
Ghana	---	613	1013	---	9	12
Kenya	---	822	1686	---	8	11
Nigeria	1292	1004	908	4	3	2
Senegal	---	360	388	---	12	9
South Africa	1605	1548	1706	15	15	14
East Asia	111429	133722	155645	19	18	17
China	93275	102486	120409	16	15	16
Hong Kong	919	535	228	36	18	7
Indonesia	6025	11505	12406	10	14	14
Malaysia	855	2052	2271	15	26	23
Philippines	1927	2578	3049	10	10	9
Singapore	313	385	485	25	23	21
South Korea	3504	4797	4234	24	24	19
Thailand	2109	4293	5588	9	14	16
Taiwan	2502	2449	2726	34	27	27
Vietnam	---	2642	4250	---	8	10
South Asia	26808	39753	46519	10	11	12
India	26160	38965	45134	10	11	12
Sri Lanka	648	788	1385	13	15	16

Note: --- Data not available

Source: Athukorala and Rajapatirana (2000) and Athukorala (2005) (for Sri Lanka); Nguyen (2014) (for Vietnam) and Lapova and Szirmai (2012, Table 2) (for other countries)

Table 2: Labour Productivity in Manufacturing in Developing Countries, 2005-2010 (annual averages)

	Value Added (VA) per Worker in Secondary Sector, Constant US dollars	Ratio of VA/worker to Korea's VA/worker
Albania	8,110	8.8
Argentina	24,822	27.0
Armenia	28,403	30.9
Azerbaijan	44,847	48.8
Bhutan	25,363	27.6
Brazil	18,599	20.3
Bulgaria	13,748	15.0
Cambodia	3,359	3.7
Chile	39,481	43.0
China	10,799	11.8
Colombia	23,951	26.1
Costa Rica	16,232	17.7
Croatia	34,397	37.5
Cuba	12,553	13.7
Czech Republic	38,029	41.4
Dominican Republic	17,142	18.7
Ecuador	14,885	16.2
Egypt, Arab Rep.	10,894	11.9
El Salvador	10,641	11.6
Estonia	1,992	2.2
Hungary	31,452	34.3
India	4,089	4.5
Indonesia	15,500	16.9
Jamaica	13,113	14.3
Jordan	26,114	28.4
Kazakhstan	28,778	31.3
Korea, Rep.	91,830	100.0
Kyrgyz Republic	2,183	2.4

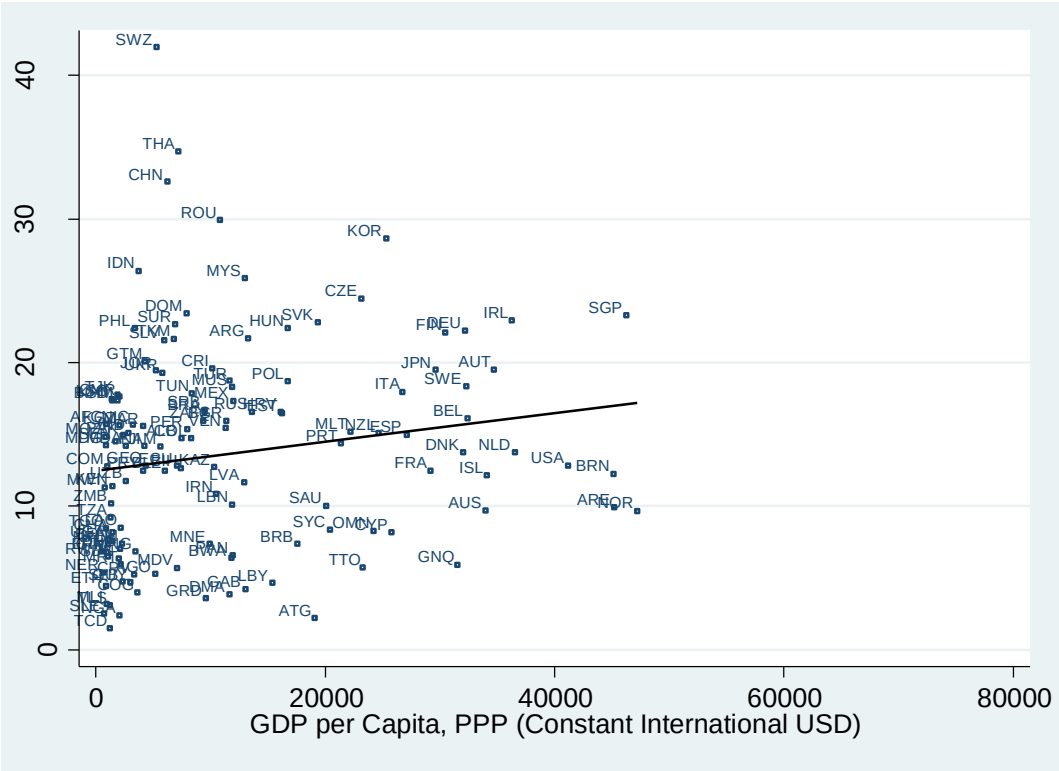
Note: 1. Value Added per worker in Secondary Sector (2005 dollars per year)
Source: World Development Report 2013

Table 3. Employment Elasticity in Manufacturing by Region and Period

Region	1965-2004	Various sub-periods	
Developed Countries	0.34	1965-1969	0.62
Africa	-0.6.93	1970- 1974	0.52
Latin America and Caribbean	0.03	1975-1979	0.66
Central and Eastern Europe	0.40	1980-1984	-0.23
East and South-East Asia	0.42	1985-1989	0.19
South Asia	-0.87	1990-1994	-8.77
Other Asia and the Pacific	0.19	1995-1999	-0.09

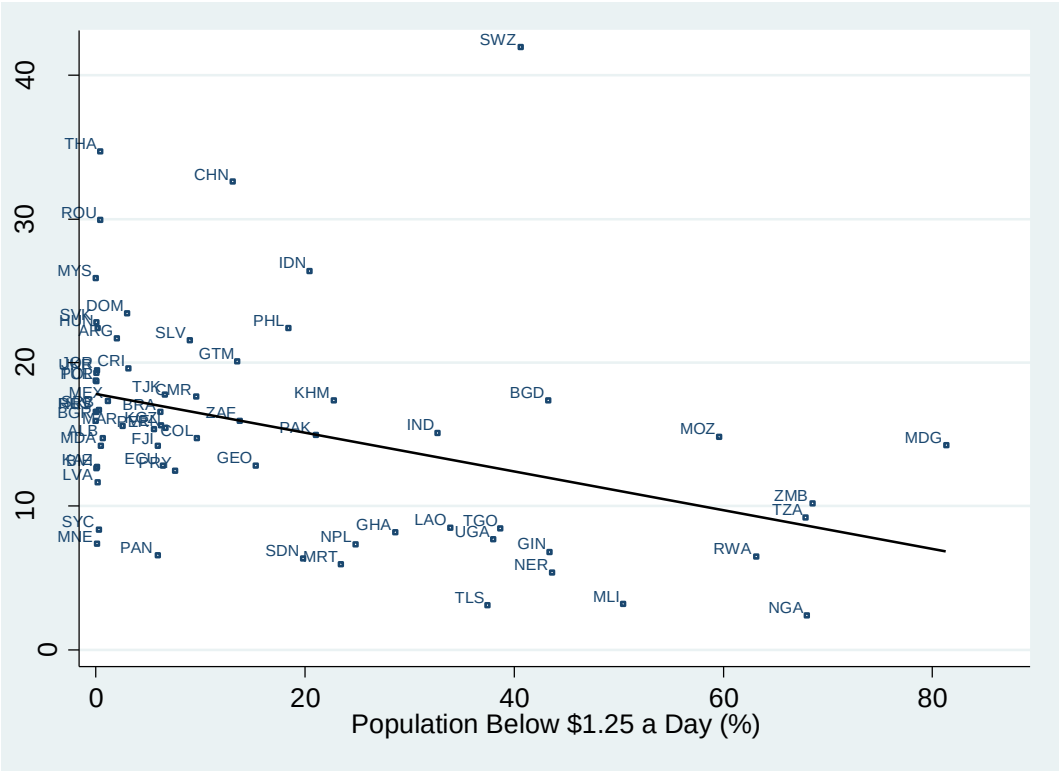
Source: Computed from from *UNIDO Industrial Statistics*, various years.

Figure 4. Industrialisation and Per Capita Income, 2010



Source: Based on data extracted from World Bank, World Development Indicators database.

Figure 2. Industrialisation and Poverty, 2010



Source: our calculations, Industrialisation: Industry's Share of GDP, data from Quality of Government data-base.

Figure 3. Industrialisation and Inequality, circa 2010