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The 'resurgence' of globalisation into Sub-Saharan Africa:
economic impact and policy implications for human development

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Abstract

Africa today is fully regaining its traditional role as a supplier of natural resources in the global production chain, with a growing role as a demand market for manufactured products produced elsewhere. South-South economic and political relationships, where China has a predominant role, represent a key distinctive feature to understand these recent changes. Against this background, the aim of the paper is twofold. First, we are interested in understanding the impact on Sub-Saharan Africa (SSA) of the contemporary wave of the globalisation process, in terms of economic growth and in particular of human development. Second, we want to advance some policy suggestions that could allow African economies to translate these 'new' opportunities into full improvements of human development. The paper is based on the one side on the analysis of the economic structure and the institutions that characterise SSA countries, and on the other on the human development and capability approach. According to our theoretical grounds and some tentative econometric estimations, economic and human development in SSA cannot occur only through a sustained growth of GDP. Economic growth is definitely relevant, since it is one of the prongs meant to increase human development, but it also has to be shared by the sectors from which the poor draw most of their incomes. Public policies and investment in basic social services and in up-grading the informal and agricultural sectors are proposed, in order to enhance the impact of current economic on social outcomes.

The proposal is along the following two themes suggested:
**Human Development (education, health, gender, demographic transition)
**Regionalism and Geo-economics (south-south cooperation, bilateral cooperation, trade policy issues, cross border migration)

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1. Introduction

The enduring marginalisation of Sub-Saharan Africa (SSA) in today's globalised world seems to be close to a significant turning point, where relevant changes may materialize. The competition over natural resources among developed and emerging fast-growing economies has at least re-opened 'new' opportunities for many SSA countries. Not only the prices of many exported commodities – and not just oil – have risen for over the last few years, to an extent that actually may even challenge the Prebish-Singer hypothesis; but Foreign Direct Investment (FDI), trade, and aid – the three main channels of economic and political interaction among countries – have entered into a new phase, where the South-South relationships are playing an increasingly important role.

According to the mainstream economics literature, the three main channels are all expected to produce positive outcomes (although some possible perverse effects have been warned since long, for instance by Corden and Neary, 1982). According to the neo-liberal recipes, globalisation, meant as the financial and trade integration among countries associated with technological progress and multilateral liberalisation, is creating unprecedented opportunities for SSA countries to accelerate growth and lift millions of people out of poverty.
In recent years, as a consequence of a change in the prices of primary commodities, many African countries have experiences higher rates of growth (Broadman, 2006). This, however, could entail a further delay for the diversification process of traditional exports, with all the risk associated with being mere resource-curse economies. Moreover, the three channels – which in many African countries are mutually reinforcing, given the simultaneous increase in commodity exports, FDI and international aid (OECD, 2007) – may trigger a *Dutch disease*, i.e. the overvaluation of the local currency. This would make the African manufacturing sector less competitive in the international markets, and the consequences could be even more exacerbated in terms of employment, if policies to counterbalance the losers are not implemented.
Africa is endowed with extractive industries such as oil, mining, and timber that are very capital-intensive and, hence, economic development strategies based solely on raw commodities risk a very limited effect, if any, on poverty levels: Although the national incomes may increase, natural resources exploitation generate preciously few job opportunities for the low-skilled (Goldstein at al., 2006).

In other words, Africa is nowadays fully regaining 'its position' in the global production process, of both natural resources supplier, and consumer of final manufactured products.

These circumstances cannot be seen only as the outcome of an increased 'hungriness' over (decreasing) natural resources (Trinh et al, 2006) by 'rich' governments and aggressive global buyers. It brings out many complex issues, with strong impacts at both the global and African level. For instance, today the political influence of US and EU governments, as well as the power of multinational companies over African economies are at least challenged, when not yet reduced, by the large and fast-growing emerging countries. This is mainly due to the vitality of South-South relationships where China, and in part India, are assuming a leading role. Moreover, the IMF and the World Bank are also challenged in their international influence, since they are gradually loosing their control (the leash of loans 'monopoly') over African governments and local *elites*.

Considering that our concern is more economic and social than political, the main issues arising from this new situation concern the impact of these recent changes on African economies, in terms of economic growth and social outcomes. This raises the question of what policies could be put in place to increase the inclusiveness of the current economic growth.

The ambition of the paper is, thus, twofold. First, we are interested in analysing the impact of the globalisation process on SSA countries, in terms of economic growth and human development. Second, we wish to derive policies that could allow African economies to translate these 'new' opportunities into a full improvement of human development.

We interpret the process of economic and human development as crucially affected by institutional and non-institutional endowments, and by the peculiar structure of SSA economies. Institutions are the rules, both formal and informal, that allow a social and economic system to function, while the non-institutional resource endowment is composed of the human and physical capital, including infrastructure and services (such as health, sanitation, education, training, extension and financial services, etc.).
Our paper is based on the analysis of the economic structure and institutions on one side, and on the human development and capability approach (Sen, 1999) on the other, in order to evaluate the impact of the globalisation process in terms of human development. Poverty reduction and human development are the social and economic goals towards which Sub-Saharan African economies should be directed, since human beings are the ends of economic activity rather than its means[1].

We argue that because of the economic structure and the institutional and non-institutional or resource endowments, a large part of the population is fully 'marginalised' by the globalisation process and that, without a broad political intervention, the 'opportunities' given by the renewed rate of economic growth do not translate into more human development and faster poverty reduction. Overlooking these factors, as often the case, can only led to a partial understanding of the functioning of the SSA low-income economies. Neglecting their economic segmentation and ignoring the presence of a large informal sector from which the poor draw most of their incomes drive us into a vacuum in terms of policy making.

In this paper, we analyse in depth the functioning of the informal sector and the likely impacts on it that are induced by the new wave of globalisation. We define the informal sector as the whole set of activities not governed by legal institutions, and/or those organised in different ways from those characterising the economic activities typical of a 'modern' economy (Volpi, 1994)[2]. The informal sector spans from small-scale manufacturing and repair, to trade, transport and construction and services. In urban areas, informal activities range from street vendors to small manufacturing entities and, in rural areas, small enterprises are engaged in the production, transformation and sale of farm and non-farm products. It follows that the non-modern agricultural sector (subsistence and semi-subsistence or small household farming) is considered part of the informal sector (see also Ray, 1998, p. 348; United Nations, 1996)[3]. This gives a more realistic dimension of the informal sector and a different perspective in the analysis of the structure of SSA economies. For instance, the share of non-agricultural self-employment has passed form 50 percent in the period 1980-1989 to 53 percent during 1990-2000 (ILO 2002, p. 22). The total of non-agricultural informal employment reached 72 percent for SSA, or 78 percent when South-Africa is excluded (Chen, 2005, p. 83). This means that if traditional and subsistence agriculture is included, the labour force in the informal sector can amount to approximately 90 percent of the working population, with a predominance of female employment (ILO, 2002, see the WIEGO web site for further details).

The presence of a large part of the labour force employed in the informal sector, which instead produces a small share of the GDP, determines the "apparent paradox" of the non-relevance of the informal sector, "if the policy goal is reaching higher rates of GDP per capita growth". But the informal sector is conversely critical for the wellbeing of these countries; and it certainly represents a non-transitory feature of SSA economies.

A specific focus on the true characteristics of SSA low-income economies should bring about more realistic assumptions on their functioning and better policy recommendations[4]. As a matter of fact, many of these countries (basically, all SSA minus South Africa, Seychelles and Mauritius) share common socio-economic features and similar institutions (Biggeri, forthcoming, Biggeri, 2004), that cannot be ruled out in analysing the way they interact with the rest of the world.

[1] Human development is regarded as 'an expansion of capabilities' or of 'positive freedoms' (Sen 1999, Nussbaum 2000, for a review see UNDP 2000).
[2] See also Biggeri (2007, 2004) and Chen (2006).
[3] There are differences among agricultural and non agricultural sector as it is specified later.
[4] In this research the analysis on institutional and non-institutional factors remains at theoretical level. Therefore, no distinction is made on different institutional frameworks among SSA low-income countries.

The value added of this paper lays in the economic policies it advances. Usually, it is assumed by the IMF and the World Bank that the rapid growth of the GDP will suffice to bring about both economic development, and social wellbeing. However, the experience of most SSA countries in the 1960s and 1970s shows that this was not the case: in the countries that recorded respectable rates of GDP growth, the inadequacy of growth for addressing employment and poverty problems has become soon obvious, as the "trickle-down" process failed to materialise. At best, whatever "development" took place as a consequence of growth-oriented strategies, it was unbalanced and concentrated in the modern sector, and therefore did not contribute much to the need for productive employment and income of the urban poor and of the large rural population. Indeed, we need to acknowledge that even with economic growth the gap between rich and poor can widen, hence 'the quality of growth matters' (UNDP, 2003; Cornia, 2004)[5].

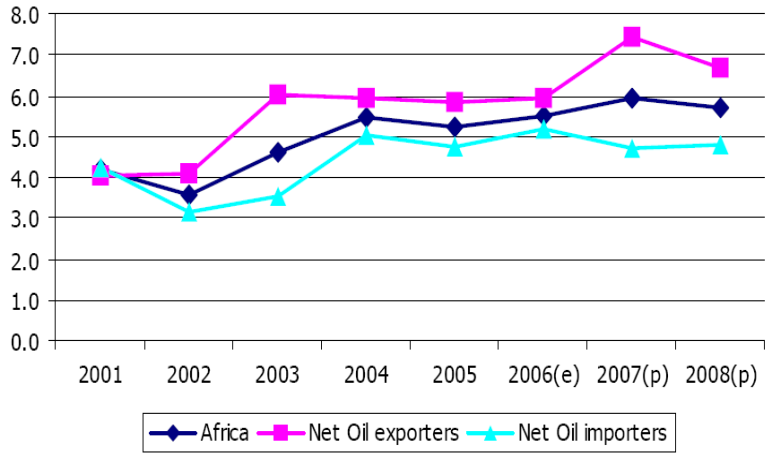
The paper is organised as follows. In the next section, we present empirical evidence on the resurgence of trade, FDI and aid to SSA, emphasizing the relevance South-South trade and aid relationships, by presenting China's move into Africa as a major example of this trend. In order to understand the economic and social impact of the globalisation process, an econometric analysis is then carried out. The analysis is based on a panel of data for 43 African countries over the last 8 years (1997-2004).
In the third section, we briefly examine the impact of the possible undesired effects of globalisation from a theoretical point of view (such as the *Dutch disease*), while in the fourth section an alternative perspective is proposed, by outlining a stylised structure of SSA economies. Both the production and the consumption sides are considered. Partitioning the various economic activities and differentiating their functioning and responses give us the opportunity to look at SSA low-income economies from a different perspective, compared to what is usually proposed. Afterwards, a second model is presented, in order to understand the type of impact that globalisation produces on economic and social outcomes.
In the fifth section, we present an approach to eliminate poverty based on two synergies, through a simple interpretative model for analysis human development according to two related dimensions: economic outcomes and social outcomes. Hence, we draw the ensuing policy implications for human development in SSA.
Finally, in the last section we present the main conclusions and limits of the research.

[5] Human Development Report use the term of 'ruthless growth' for a growth that do not reach the poor (UNDP, 2003, p. 67). Nowadays the literature focuses on inclusive development (Adésìnà, 2007)

2. New trends and outcomes for Africa

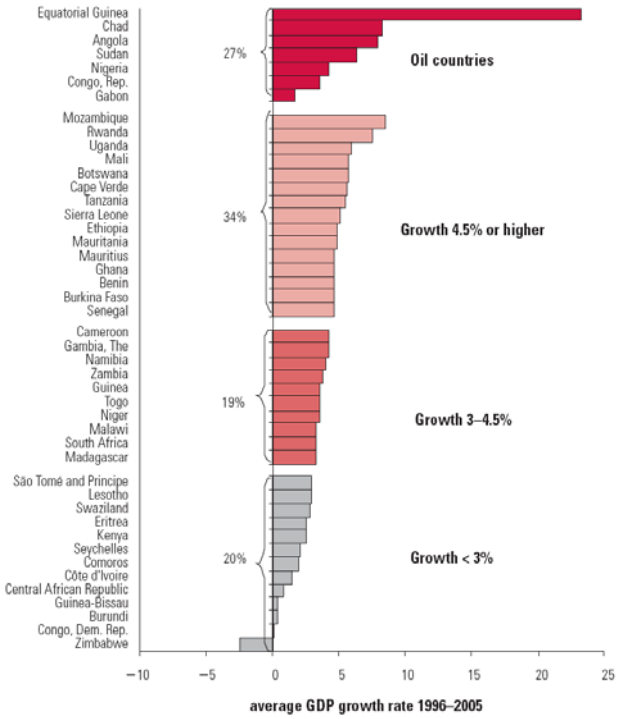
According to the African Economic Outlook 2007 Africa grew by 5.5 per cent in 2006 – well above the long-term trend and for the fourth consecutive year. GDP per capita grew by about 3.5 per cent. Growth also appears set to accelerate somewhat on average in 2007, and to remain optimistic in 2008 (ADB and OECD, 2007). The positive trend (see figure 1 and 2) is higher for African oil exporter countries, however, the oil-importing countries have not been left behind and metals producers also profited from higher world prices and to a lesser extent higher export volumes[6].

Figure 1. Growth trends for Africa and differential between oil exporters and the rest



Source: ADB and OECD (2007)

Figure 2. Africa economic growth pattern



Source: OECD (2006)

[6] In the last years according to the African Economic Outlook 2007 the price of agricultural exports has been falling hurting countries dependent on them. However in 2006 rubber, coffee and seafood exporters enjoyed good prices that helped trade balances. Some producers, despite weak world prices (of cotton, for example), managed to boost exports substantially thanks to good weather, and some in Central and East Africa (Madagascar, Rwanda and Tanzania) and West Africa (Benin, Burkina Faso, Ghana, and Mali) achieved high export growth as well. A number of diversified exporters also exhibited strong export volume growth (Egypt, Mauritius, Morocco) (ADB and OECD, 2007).

Furthermore, Africa has significantly increased its openness to international trade: merchandise trade as a share of GDP rose from 43 to 50 per cent between 1980-1995 and 1996-2005 and FDI inflows have surged, growing faster than in other developing regions and tripling their level between 2001 and 2005 (reaching $30.6 billion) (ADB and OECD, 2007).
However, it is relevant to notice that Africa's share in world trade remains minimal, at about 1.5 per cent, and exports are concentrated in a narrow range of primary commodities such as fuel i.e. nearly 60% of total export furthermore that FDI heading for Africa accounts for less than 4 per cent of the world total and is unequally distributed with Northern Africa, South Africa and the largest Sub-Saharan oil producers being the main recipients by far (ADB and OECD, 2007).
These relationships reflect Africa's dependence on its natural resources. According to the literature "The private sector is only marginally involved in international production networks, mainly in assembly at the bottom end of the value chain. The post-MFA closure of several foreign-owned clothing factories in Southern and Eastern Africa shows their vulnerability." (ADB and OECD, 2007).
Moreover, the outstanding economic growth has not been translated into human development. Although there are exceptions (e.g. some North African countries), access to basic social services has been insufficient. For instance, between 1990-2004, in Sub-Saharan Africa the absolute number of people without access to improved drinking water has increased by about 60 million. "Even then, some 234 million people would still lack access to safe drinking water by 2015 and 317 million to improved sanitation" (ADB and OECD, 2007).
In table 1 we report the data for African countries regarding three relevant indicator the Under five mortality rate (U5MR), the Infant mortality rate (IFM) and the life expectancy (LE). The results are clearly a point of strong dissatisfaction. Although the causes are often connected to the low access to basic social services (see table 1 for water and health access) and to the spread of conflicts and AIDS-HIV, the results contrast seriously with the economic outcomes.
Thus the one side the recent African economic growth rates seem related to these new relationships driven by the globalisation process. On the other side the growth process has a non impact in social outcomes and well-being of African people seems 'again and again' left behind.

Table 1. Access to BSS, Urbanisation and Life Expectancy at Birth (LE), Under-5 Mortality Rates (U5MR) and Infant Mortality Rates (IMR)

	LE			U5MR			IMR			Improved sanitation facilities (% of population with access)	Improved water source (% of population with access)	Urban population (% of total)--	
Countries	1995	2000	2005	1995	2000	2005	1995	2000	2005	2002	2002	1995	2004
Angola	39.97	40.44	41.42	260	260	260	154	154	154	30	50	29.6	36.5
Benin	53.54	53.68	54.99	170	160	150	102	95	89	32	68	38.4	45.3
Botswana	56.78	42.69	34.97	66	101	120	50	74	87	41	95	47.7	52.0
Burkina Faso	46.28	46.79	48.48	204	196	191	107	100	96	12	51	15.2	18.2
Burundi	42.14	42.83	44.65	190	190	190	114	114	114	36	79	7.5	10.3
Cameroon	50.05	46.97	46.06	151	151	149	89	88	87	48	63	44.7	52.2
Cape Verde	67.47	69.24	70.71	50	42	35	37	31	26	42	80	48.7	56.7
Central African Republic	44.14	40.59	39.43	180	193	193	107	115	115	27	75	39.1	43.3
Chad	45.27	44.03	44.02	202.2	205.2	208.3	120.5	122.2	123.9	8	34	22.2	25.4
Comoros	58.85	60.73	62.64	101	84	71	74	62	53	23	94	30.5	35.7
Congo, Dem. Rep.	42.75	42.44	44.03	205	205	205	129	129	129	29	46	28.7	32.3
Congo, Rep.	51.66	51.42	52.81	108	108	108	81	81	81	9	46	50.2	54.0
Cote d'Ivoire	48.67	46.63	46.18	175	188	195	110	115	118	40	84	41.7	45.4
Equatorial Guinea	45.64	44.27	42.28	187	200	205	112	120	123	53	44	39.9	49.0
Eritrea	50.81	52.75	54.90	122	97	78	74	61	50	9	57	17.1	20.4
Ethiopia	44.10	42.29	42.65	178.5	150.6	127	107.4	92.4	79.7	6	22	13.9	15.9
Gabon	58.82	56.04	53.83	91	91	91	60	60	60	36	87	75.9	84.4
Gambia, The	52.74	54.72	56.79	146.1	141.5	137	100.5	98.5	96.6	53	82	26.4	26.1
Ghana	56.76	56.72	57.48	110	112	112	67	68	68	58	79	40.2	45.8
Guinea	50.55	52.86	54.05	208.5	183.1	160	124	109.9	97.4	13	51	28.8	35.7
Guinea-Bissau	43.76	44.45	45.12	235	215	200	143	132	124	34	59	27.6	34.8
Kenya	53.14	48.43	48.99	111	117	120	72	77	79	48	62	30.0	40.5
Lesotho	52.16	41.16	35.16	90.7	108.4	131.8	73.3	86	102.3	37	76	17.4	18.1
Liberia	41.35	42.23	42.47	235	235	235	157	157	157	26	62	42.0	47.3
Madagascar	53.22	54.79	55.82	156	137	119	95	84	74	33	45	25.5	26.8
Malawi	43.09	40.44	40.52	192.5	155.3	125.3	115.1	94.9	78.9	46	67	13.3	16.7
Mali	47.10	47.57	48.62	233	224	218	131	124	120	45	48	26.9	33.0
Mauritania	50.06	51.66	53.66	127	125	125	81	79	78	42	56	50.9	63.0
Mauritius	70.33	71.66	73.02	21.4	18.1	15	19.6	15.8	13	99	100	41.6	43.5
Mozambique	43.67	42.64	41.81	212	178	145	145	122	100	27	42	26.2	36.8
Namibia	59.52	52.28	46.93	77	69	62	55	50	46	30	80	28.6	33.0
Niger	41.81	43.60	44.93	295	270	256	176	159	150	12	46	18.2	22.7
Nigeria *	47.44	46.58		230	207	194	120	107	100	38	60	39.5	47.5
Rwanda	31.69	40.93	44.12	209	203	203	124	118	118	41	73	8.2	20.1
Sao Tome and Principe	62.19	62.67	63.49	118	118	118	75	75	75	24	79	37.3	37.9
Senegal	54.45	55.20	*56.45*	148.1	132.6	118.7	71.8	66.1	60.9	52	72	43.8	50.3
Seychelles**	71.12	72.34	72.95	16	14.5	13	14	13	12	..	87	49.7	50.1
Sierra Leone	39.11	40.21	41.36	293	286	282	171	167	165	39	57	33.3	39.5
Somalia	42.13	45.19	47.73	225	225	225	133	133	133	25	29	31.1	35.4
South Africa	58.00	47.81	47.66	59	63	68	45	50	55	67	87	52.6	57.4
Sudan	54.59	55.94	56.66	106	97	90	69	65	62	34	69	31.4	39.8
Swaziland	57.64	45.44	41.46	110	142	160	78	98	110	52	52	23.0	23.7
Tanzania	49.86	46.83	46.30	159	141	122	100	88	76	46	73	26.9	36.5
Togo	56.38	54.71	55.10	146	142	139	83	80	78	34	51	30.8	35.8
Uganda	43.06	45.12	49.95	156	145	136	92	85	79	41	56	11.6	12.4
Zambia	40.56	37.90	38.41	182	182	182	102	102	102	45	55	37.3	36.2
Zimbabwe	48.87	39.84	37.26	90	117	132	60	73	81	57	83	31.7	35.4
Algeria	68.65	70.22	71.73	53	44	39	43	37	34	92	87	54.3	59.4
Djibouti	51.82	52.47	53.39	161	147	133	106	97	88	50	80	79.2	84.1
Egypt, Arab Rep.	66.11	68.79	70.53	71	49	33	56	40	28	68	98	42.8	42.2
Libya	71.24	73.14	74.35	28	22	19	25	20	18	97	72	83.0	86.6
Morocco	66.90	68.81	70.38	69	54	40	56	45	36	61	80	52.0	58.1
Tunisia	71.35	72.60	73.45	40	31	24	32	25	20	80	82	61.3	64.1

* 1997, 2002; ** 2002

Source: Unicef (2007) and WDI (2007)

2.1. South-South relationships: the Sino-African case

In the literature - and among international agencies and policy makers - there is a growing interest in studying the renewed Sino-African relations (table 2). Two main issues have emerged so far: which are the determinants behind the recent Chinese move into Africa (Biggeri and Sanfilippo, 2008b, forthcoming); and what is the impact on African economies in terms of economic growth and poverty reduction.

With respect to the second issue, it could be argued that the Sino-African relationships represent for Africa the challenge of transforming the inflows of FDI, exports and aid from China into an 'opportunity' for human development. The economic correlation between African growth and the Chinese presence is not, however, so straightforward and the impact on poverty remains uncertain (Broadman, 2006).

Low-income SSA economies, often marginalised by the globalisation process, have an increasing and strategic role in international relations (Biggeri and Sanfilippo, 2008a, forthcoming). As 'allies' of the Chinese Government, African countries enhance the PRC's political and competitive position in the globalized world. China is seeking to gain the support of developing countries so that it can then use its veto at the Security Council at the United Nations to counterbalance the power of the United States. This is often done by presenting itself as a successful developing country willing to provide international assistance to other developing countries without asking for any conditions. Some experts have pointed out that the so-called *Beijing Consensus* seems to have been juxtaposed to the Washington Consensus (Sautman, 2006). This leads to a deeper discussion of the possible impact of China on Africa: on the one hand it is hoped that this could represent a new opportunity for the development of the region and that Sino-African relations could result in a classic 'win-win' situation for both the parties; on the other hand there is the fear of a new form of colonialism that could in the end lead to a country's resources becoming an economic curse rather than blessing (for a more detailed discussion see, Tull (2006) and Taylor and von Arnim (2006)).

The distribution of Chinese outward FDI shows that, globally, the most is directed to the tertiary sector, although recently conspicuous flows have been directed to oil-rich African countries and to countries with relevant internal markets (Broadman, 2006). This is confirmed in part by the data from MOFCOM, which show that total investments have been directed largely, but not exclusively, to resource-endowed countries until 2005.

Among energy and primary resources, oil is probably the 'most wanted' resource (and in this case two SOEs, CNPC and Sinopec, are quite active in oil producing countries as well in resource exploration in other countries). Tertiary sector is also much relevant in absolute terms, with growing investments in the telecommunications (with the Huawei Technologies) in 39 African countries[7], and the construction sector that historically holds a prominent position in the Chinese investment to Africa.

With respect to the trade channel, the main issues to notice are the outstanding increase of commercial exchanges over the last decade and the fact that the flows are not merely unilateral. The pattern of trade exchange reflects somehow the classical theory of comparative advantages. African exports to China are, in fact, represented by natural resources and primary commodities in general, while China supplies African markets with low cost manufacturing.

In this sense it seems that Africa could gain in both cases, either through an increase of the terms of trade of the commodities exported, or by getting access to cheaper consumer and capital goods. This is, however, only one side of the story. Jenkins and Edwards (2005), for instance, highlight that behind these complementary effects, there are as well competitive effects, since the Chinese entry in local markets tends to displace local productions (as in the case of textiles). If the direct effects are easy to be measured and give rise to the dichotomy complementarity/competitive, the indirect ones, that regards China's impact on Africa as a consequence of the country's relations with third parties and are, thus, more complex to be evaluated and very much dependent on the structure of these economies.

The exports from Africa to China soared during the last decade[8]. According to a recent study the share of few categories of products (namely crude oil, whose import from Africa accounts for one

[7] "China's African Safari", Fortune, 20th of February 2006

[8] Even if the numbers are relevant, they are probably overstated due to the rise of prices of some primary commodity.

quarter of the total, metals and wood) explain almost all the trade with China (Goldstein et al., 2006). Africa's contribution to satisfy the growth of Chinese demand over natural resources has been relevant, especially in the case of some countries (e.g. in 2005, 70 percent of Sudanese exports were directed to China, while Angolan exports lied at 30 percent). Furthermore, Goldstein et al. (2006) emphasize how the competition over African countries exports - i.e. export to other countries (mainly OECD countries) - was reduced in order to leave space to exports to China.

This export pattern has reinforced African countries position (particularly in the case of oil and ores) as exporters of almost exclusively natural resources. The impact of the growing demand from China (and in some cases India) is reflected in prices of primary commodities[9]. Where China (and India) are net importers there has been a relevant rise of prices compared to markets where the two countries are net exporters (e.g., aluminium for China) or 'switching producers' (Goldstein et al., 2006). Chinese 'hungriness' of natural inputs has generated such a strong impact in the global market that it has been observed an inversion in the historical trend of terms of trade for developing countries (Kaplinsky, 2005). Exports to China reached around $25 billion in 2006, twelve-fold their level in 1995 (ADB and OECD, 2007).

As regards the other part of the story, i.e. Chinese exports to Africa, the first thing to notice is that PRC has become (since 2004) the second main exporter in the continent (after France). Therefore China considers Africa as an important market where to place its growing stock of low cost manufacturing products whose production is in 'excess' at home, as well as its competitive capital goods and machineries, and this is as well interlinked to FDI in the continent,. This trend is confirmed by the data that show how Chinese exports to Africa are concentrated on a small number of countries that correspond to the most populated ones and those with the greatest markets such as South Africa, Nigeria, Egypt, Morocco, Algeria and Sudan (van de Looy, 2006).

The Chinese government has, in fact, found the way to link official development assistance to its outward FDI, by encouraging recipient governments to use the assistance received to attract investments, particularly in the construction sector (Cai, 1999). Construction projects are thus part of a more complex strategy that includes also the provision of aid and technical assistance to the same countries as it is possible to capture from the official definition provided by the Statistical Bureau of China.

Different types of international cooperation projects can be identified in the African case: infrastructure (which includes railways, roads, telecommunications and facilities); buildings (stadiums, government offices and schools); factories (cotton or textiles, timber, oil, cigarettes); and, agriculture (farming, tobacco, tea and sugar production) (Van de Looy, 2006, p. 7). Although technical cooperation remains the major mode adopted by Chinese international cooperation with developing countries, it is important to note that a common way of helping third countries is, for instance, the provision by PRC of soft loans (as recently in the case of Angola) at low interest rates and guaranteed by the production of oil. Another set of examples come from the outcomes of the Beijing Sino-African conference of December 2006.

China has become the main trade partner for a number of African countries providing cheap manufactured goods and reducing Africa's dependence from its traditional trading partners. Despite the push for exports, terms of trade and growth that the Asian giants provide to Africa, risks for sustainable poverty reduction are visible in higher raw material dependence and rent-seeking activities (Goldstein at al., 2006).

[9] Crude oil, for instance, rose from $ 40 a barrel in 2004 to $ 70.85 in August 2005, keeping this trend also during 2006 (showing, in real terms, the highest prices ever). Chinese demand has grown of 15.4% in 2004 (compared to the 3.8% worldwide), and, how it has been remarked above, will grow over the next years, thus keeping the price of oil high. This is, however, behind the possible advantages for oil exporter countries, a bad news for the African oil-importer countries (African Development Bank, 2006).

Table 2 – Relationships between China and Africa: OFDI, Trade and Economic cooperation (USD) selected countries

	OFDI received			Trade (I+E)			Economic Cooperation		
Country	**Total approved (2005)**	**% on total (2005)**	**Annual average rate of growth (1998-2005)**	**Total (2005)**	**% on total (2005)**	**Annual average rate of growth (1998-2005)**	**Total (2005)**	**% on total (2005)**	**Annual average rate of growth (1998-2005)**
Algeria	166898000	9.81	141.34	1768150000	4.52	47.43	1065350000	17.20	43.96
Angola	17931000	1.05	37.00	6954620000	17.77	67.20	305740000	4.94	44.00
Benin	32196800	1.89	64.49	1092340000	2.79	31.92	2080000	0.03	-6.58
Botswana	8754000	0.51	22.75	62510000	0.16	27.39**	265310000	4.28	22.79
Cameroon	16380800	0.96	9.04	196620000	0.50	16.48	18550000	0.30	4.68
Cape Verde	1450000	0.09	13.43	5190000	0.01	0.03**	1690000	0.03	-5.65
Central African Republic	4286000	0.25	13.32	16080000	0.04	47.27	23850000	0.39	37.17*
Chad	6170000	0.36	67.05	206010000	0.53	134.39**	17960000	0.29	NC
Congo, Dem. Rep.	43651800	2.57	26.89	2422740000	6.19	68.34	83140000	1.34	29.83
Congo, Rep.	7589120	0.45	133.59	225480000	0.58	14.37	115500000	1.87	62.62
Cote d'Ivoire	18933000	1.11	6.51	222120000	0.57	3.37	26190000	0.42	-15.93
Egypt, Arab Rep.	73130000	4.30	24.51	2145180000	5.48	19.78	276530000	4.47	44.48
Equatorial Guinea	14912400	0.88	9.33	1456630000	3.72	35.96*	74930000	1.21	76.22
Eritrea	2015000	0.12	10.96	8240000	0.02	30.48**	19210000	0.31	13.29
Ethiopia	30028000	1.77	50.18	369710000	0.94	27.17	182960000	2.95	11.11
Gabon	35165000	2.07	19.05	392960000	1.00	13.97	42860000	0.69	13.28
Gambia, The	3693100	0.22	11.26	124520000	0.32	13.72	14130000	0.23	37.90
Ghana	24152000	1.42	36.11	768430000	1.96	30.37	83290000	1.34	31.47
Guinea	59881500	3.52	39.65	147310000	0.38	21.30	76970000	1.24	8.05
Guinea-Bissau	4267000	0.25	0.23	5790000	0.01	21.87	27460000	0.44	0.78
Kenya	25157730	1.48	16.59	474570000	1.21	21.75	35990000	0.58	5.27
Lesotho	1445000	0.08	12.75	56150000	0.14	27.12**	25230000	0.41	15.48
Liberia	14768000	0.87	10.44	163800000	0.42	28.85	9060000	0.15	17.97
Libya	2096000	0.12	54.44	1302220000	3.33	45.76	132210000	2.13	42.80
Madagascar	30308400	1.78	45.21	196640000	0.50	28.24	30110000	0.49	6.69
Mali	58531600	3.44	10.97	145190000	0.37	25.72	176870000	2.86	9.30
Mauritania	3738000	0.22	11.23	78360000	0.20	32.80	43800000	0.71	12.32
Mauritius	55028000	3.23	33.64	185620000	0.47	15.79	91520000	1.48	4.97
Morocco	9428000	0.55	37.09	1483880000	3.79	28.85	49440000	0.80	15.68
Mozambique	16798100	0.99	48.00	165010000	0.42	42.59	96150000	1.55	54.77
Namibia	11246000	0.66	6.32	136740000	0.35	41.79**	36020000	0.58	9.28
Niger	15214000	0.89	47.12	33900000	0.09	24.26	19450000	0.31	6.50
Nigeria	103306600	6.07	26.01	2830040000	7.23	32.99	799920000	12.92	29.37
Rwanda	2851000	0.17	0.00	23540000	0.06	28.72	9800000	0.16	-2.83
Sierra Leone	20981400	1.23	51.47	32120000	0.08	32.80	18280000	0.30	-3.56
South Africa	252835130	14.86	24.61	7269020000	18.57	24.61	82790000	1.34	4.27
Sudan	241164500	14.18	55.82	3908050000	9.98	41.10	1342780000	21.68	11.27
Tanzania	48814000	2.87	12.94	474300000	1.21	29.03	211670000	3.42	36.15
Togo	7781200	0.46	32.07	569970000	1.46	37.22	12550000	0.20	12.02
Tunisia	3025000	0.18	46.39	339630000	0.87	14.74	65490000	1.06	101.83
Uganda	8039000	0.47	12.94	99370000	0.25	37.11	56440000	0.91	20.59
Zambia	157608700	9.27	20.30	300560000	0.77	40.11	33390000	0.54	-16.74
Zimbabwe	39442900	2.32	4.03	283290000	0.72	11.44	89920000	1.45	2.14
Total (Africa)	**1701092780**	**100.00**	**25.68**	**39142600000**	**100.00**	**33.05**	**6192580000**	**100.00**	**18.17**

* the annual average rate of growth is calculated for the period 1999-2005

** the annual average rate of growth is calculated for the period 2000-2005

Source: Biggeri and Sanfilippo (2008b, forthcoming)

2.2. Empirical analysis on economic and social outcomes: tentative results and interpretations

This section aims at producing initial results and interpretations on the economic and social impact of the globalisation process. Most of the literature on the determinants of economic growth relies on 5-year (or even 10-year, as in Barro (2003)) average values, in order to smooth the influence of the business cycle on the economic results; in this respect, Rajan and Subramanian (2005) argue that "short-run growth regressions suffer the problem of the extra "noise" induced by cyclical, demand-related, factors".
The aim of the empirical analyses reported here is quite different from these types of models since the idea is to understand the medium term processes and thus it is a necessary condition to have yearly data set.
The analysis on the economic impact of the globalisation process can start from the estimation of a production function in per capita terms,

$$Y_{it} / P_{it}, = A\, f_1 (K_{it}/P_{it}, N_{it}, I_{it}, H_{it}, O_{it}/P_{it}, FDI_{it}/P_{it}, A_{it}/P_{it,} S_{it}, D_{it}/P_{it,} C_{it,} F_{it}) \quad [1]$$

where Y_{it} / P_{it}, is the output per capita, i indexes SSA countries countries (i = 1, ... , N) and t is the time period (t = 1, ... , T). The set of regressors influence economic growth both directly and indirectly through technical progress or technology-absorbing capacity *A*. Therefore, even if the function f is homogeneous of degree one, the technical progress might cause emerging return to scale to emerge. In other words, these factors (skilled labour force, infrastructure, but also agglomeration economies and institutional arrangements) lead to regional differences in technology-absorbing capacity (Lucas, 1988; Hulten and Schwab, 1991; Lin and Nugent, 1995).
In order to simplify the presentation we divide the set of independent variables into six different groups, evidencing our a priori expectations on their impact on economic growth.
The variable K represents the capital stock per capita at the beginning of the year, and its impact on per output per capita is expected to be positive.
A second subset of variables includes those related to the characteristics of the country in terms of natural resources (N),. The expectation, as discussed above, is a significant and positive relationship.
A third set of variables is constituted by endowments other than natural resources such as the level of infrastructures (I) and the level of human capital (H) which, is well-known in theory, should impact positively the per capita output. Good infrastructure not only facilitates the flows of goods and information, but also provides a focal point for the development of agglomerations, which in turn create the environment for knowledge spillovers (Mody and Wang, 1997, p. 310). Thus the expected sign is positive as, in general, an established network of infrastructures usually encourages investment. The availability of higher human capital i.e. literate/skilled population is expected to have a positive and significant impact.
A fourth set of variables describes the trade and investment relationship with other countries and in particular the opening of the market measure by trade (O), the ongoing inflows of FDI (FDI) and of international AID (A). Trade, the foreign investment flow (FDI) and aid are expected to have a positive and significant effect on economic development. Here, the analysis could be further refined if some factors are considered as endogenous to the process[10].
The fifth set of variables regards the macroeconomic imbalances of the country such as the instability of the economy through inflation (S), and a high level of international debt (D). These variables are expected to have a negative and significant effect on economic growth in the case of inflation especially if it is over 40 per cent (Bruno and Easterly, 2000).

[10] If some factors are endogenous to growth their straight inclusion in the set of regressors would produce biased estimates of true effects, and that these variables should rather be instrumented. To do so, one needs to have a large set of variables that satisfy the exclusion restriction, that is influence the endogenous regressor but have no direct influence of economic growth. Thus, one would need to find variables that influence the attractiveness of a country for foreign investors but have no influence on economic growth; with respect to official development assistance see (Rajan and Subramanian, 2005). Furthermore, Presbitero (2005) maintains that "Even if this estimator is flawed by the dynamic structure of the growth model and by the endogeneity of the variables included into the regression, large part of the literature keeps on using the LSDV estimator, at least as a benchmark."

The final set of variables evaluates the country threat given by ongoing internal and external armed conflicts throughout the continent. This is an important aspect that can be measured by those variables/factors as the presence of conflicts in the country (C) a negative impact is expected, while the lack of political freedom (F) has a uncertain impact on economic growth.

The next step is to evaluate how the factors that influence economic growth affect the social outcomes. Obviously our attention is very much related to the globalisation and the three channels. The social outcomes are often more difficult to evaluate for their multidimensionality. The HDI is often used dependent variable but has among its components the GDP per capita. Therefore, we decided, according to the literature, (see also Sen and Dreze 1999) to concentrate our attention on under five mortality rate (U5MR) and on infant mortality rate (IMR) that can be considered a relevant proxy for human development in a country. Looking at dataU5MR and the IMR are less influenced by AIDS-HIV than life expectancy at birth. A lagged effect is introduced for all the independent variables.

$$U5MR_{it+1} = f_2 (Y_{it} / P_{it}, K_{it}/P_{it}, N_{it}, I_{it}, H_{it}, O_{it}/P_{it}, FDI_{it}/P_{it}, A_{it}/P_{it,} S_{it}, D_{it}/P_{it,} C_{it,} F_{it}) \quad [2]$$

Furthermore, we also decided to evaluate the social impact using the Infant Mortality Rate (IMR) indicator which, according to the literature, has a direct and immediate link on the real social outcomes. Again a lagged effect is introduced for all the independent variables.

$$IMR_{it+1} = f_3 (Y_{it} / P_{it}, K_{it}/P_{it}, N_{it}, I_{it}, H_{it}, O_{it}/P_{it}, FDI_{it}/P_{it}, A_{it}/P_{it,} S_{it}, D_{it}/P_{it,} C_{it,} F_{it}, LE_{it}) \quad [3]$$

The data set

The data set used for the empirical analysis is provided by annual data from 1997 to 2004 for the 43 African countries in the sample (see table A1). The data source for each variable is reported in Table A1. The summary statistics of the data used are reported in table A2.

The dependent variable of the main model [1] is the GDP per capita while for the social outcomes the two dependent variables are respectively the U5MR [2] and the IMR [3].

It is important to note that all the variables in monetary values in the data set are expressed in constant 2000 USD. All the variables expressed in current USD have been adjusted using the US GDP deflator as provided by IMF.

The Gross Fixed Capital Formation is taken from the WDI of the World Bank[11].

As regards the independent variables, the natural resource supply (N) is proxied by the quantity of barrels of crude oil produced each year by each country.

The number of telephone mainlines is a proxy used in the literature to indicate the availability of infrastructure and communication facilities in the country. As pointed out by Asiedu (2002), however, it does not capture another relevant aspect, i.e. the reliability of infrastructures, for which consistent data are not available. The proxy used for the level of human capital (H) is the adult literacy rate.

The total value of trade (i.e. import+export) per capita is used in the literature as a proxy to determine the openness of an economy (O).

The total net flow of FDI (FDI) in each country. Aid is given by the total net official assistance per capita from DAC member countries (AID_pc).[12]

Inflation (INF), measured as the annual variation in the consumer price index, is used as an indicator of the country's macroeconomic instability (S). While the debt burden of a country (D) is proxied by the total external debt (DEBT). The debt burden of a country is used as proxy for macroeconomic instability.

As mentioned in the interpretative models, in order to explain the role of the political environment in each country, two variables have been introduced: one for conflicts (C) and one for freedom (F). In particular, C is a dummy variable taken from the Uppsala Conflicts Database which reports

[11] Data series where completed substituting in a very few cases missing years using GDP and calculating KF according to the share on the GDP in the previous year.

[12] The net values mean that some data could result negative due the repayment of the debt services.

updated information on countries with one or more armed conflict for the period 1989-2005. The value of the dummy is 1 if there is an active conflict,[13] and 0 otherwise (it does not capture the intensity of the conflict). The variable F is instead an index that shows the degree of freedom in the electoral process, political pluralism and participation, and the functioning of government.
Finally, location dummies are used to understand the gravity aspect as well as the geographical distribution of the flows.

The method for estimation procedure
Natural logarithms are used to transform the variables expressed in monetary value and to linearize in part the functional relationships [1], [2] and [3]. The transformation reduces the overall variability of the data and thus the heteroskedasticity at the cross section level.
According to the data available and to the proxies used, the final interpretative models are the following:

$$\ln (GDP_{it}/P_{it}) = C + \beta_1 \ln (K_{it}/P_{it}) + \beta_2 (N_{it}) + \beta_3 (TL)_{it} + \beta_4 (LIT_{it}) + \beta_5 \ln (T_{it}/P_{it}) + \beta_6 \ln (FDI_{it}/P_{it}) + \beta_7 \ln (AID_{it}/P_{it}) + \beta_8 (INFL_{it}) + \beta_9 \ln (DEBT_{it}/P_{it}) + \beta_{10} (CONF_{it}) + \beta_{11} (FREED_{it}) + u_{it} \quad [4]$$

$$\ln (U5MR_{it+1}) = C + \beta_0 \ln (GDP_{it}/P_{it}) + \beta_1 \ln (K_{it}/P_{it}) + \beta_2 (N_{it}) + \beta_3 (TL)_{it} + \beta_4 (LIT_{it}) + \beta_5 \ln (T_{it}/P_{it}) + \beta_6 \ln (FDI_{it}/P_{it}) + \beta_7 \ln (AID_{it}/P_{it}) + \beta_8 (INFL_{it}) + \beta_9 \ln (DEBT_{it}/P_{it}) + \beta_{10} (CONF_{it}) + \beta_{11} (FREED_{it}) + \beta_{11} (LE_{it}) + u_{it} \quad [5]$$

$$\ln (IMR_{it+1}) = C + \beta_0 \ln (GDP_{it}/P_{it}) + \beta_1 \ln (K_{it}/P_{it}) + \beta_2 (N_{it}) + \beta_3 (TL)_{it} + \beta_4 (LIT_{it}) + \beta_5 \ln (T_{it}/P_{it}) + \beta_6 \ln (FDI_{it}/P_{it}) + \beta_7 \ln (AID_{it}/P_{it}) + \beta_8 (INFL_{it}) + \beta_9 \ln (DEBT_{it}/P_{it}) + \beta_{10} (CONF_{it}) + \beta_{11} (FREED_{it}) + u_{it} \quad [6]$$

Where $u_{it} = \alpha_i + \varepsilon_{it}$ is disturbance. The term α_i is the country-specific residual, i.e. it differs between countries but, for any particular country, its value is constant. These country specific effects – possibly unobservable – are correlated with other variables included in the specification of the above economic relationship[14]. The term ε_{it} is the stochastic disturbance (white noise).
First an F-test is carried out to test if the individual (i.e. country) intercepts are significantly different; if so, this would require the use of panel estimators. Consistent with our expectation of strong country differences, the F-test rejects the null hypothesis of intercepts equality (the p-value is in both cases 0.000).
In order to estimate the coefficients the Hausman test is performed. According to the Hausman test, which is used to compare a Fixed Effects (FE) versus a Random Effects (RE) model, the former is preferred (p-value is lower than 0.05).

Empirical results and interpretations
The estimates of the models are reported in the four tables in the appendix at the end of the paper. In general, both the R^2 and the t-statistics are quite interesting but, as already mentioned, they should be taken with caution since are still in a tentative form.
The results for the first model (equation [4]) on the determinants of African economic development are reported in table A3 for the entire period 1997-2004, and in table A4 for the sub-period 2001-2004.
The results underline the fact that economic development is related positively with several factors as expected. In particular the Gross Fixed Capital Formation per capita, natural resources (oil), infrastructures and trade per capita have a positive and significant impact. While FDI has a positive impacr but not significant.
A detector of the strange situation of African countries is the negative and significant effect of literacy (and *vice versa*). A higher share of literate people decrease economic development. This reinforces our hypothesis and it is quite difficult to find in the theoretical and empirical literature.

[13] A conflict is defined as active when there are at least 25 battle-related deaths per calendar year in one conflict. The database reports various levels of intensity, but it has been chosen here to count only the two possibilities of conflict or not.
[14] The possible non stationarity of the relevant time series is a serious concern for the econometric analysis, as it would require to move to panel cointegration techniques. De Mello (1999) evidences that his selection of the countries included in the analysis was based "on the stationarity hypothesis, such that countries for which the output growth series are not I(0) were eliminated from the sample."

Also aid per capita has a negative influence on GDP level per capita but in this case (for Africa) could be seen as the fact that aid move to low income countries.
Other variables as debt per capita, inflation and freedom indicators have a negative sign, as expected, but non significant. The conflict indicator which in theory should show a negative and significant sign has a positive but non significant sign. The fact that African economic development in terms of GDP is independent from such tragic events sound at least curious: as if the economy moves just because of resources and trade.
The other results with U5MR and IMR (equations [5] and [6]) are tested over the same variables. The idea is to understand if the economic development and growth are somehow connected to these important social outcome and if they contribute to the reduction of mortality. The results are presented in table A5 and A6 and our comments are provided jointly, since the difference is minimal.
Oil production and the international debt have a positive and significant impact on infant mortality i.e, it increases. GDP level and growth have no impact. Infrastructure and literacy have a negative and significant impact thus helping to reduce infant mortality. Trade per capita acts in the same direction i.e. beneficial to the reduction of mortality. The other variables have a non significant impact although the sign is as expected, so aid per capita, freedom and FDI are all negative (i.e. reduce mortality), while conflict is positive. This is not the case of inflation.
Overall, we think that these empirical results indicate something only apparently bizarre, thus quite worrying. Our effort in the next section is an attempt to show that these dysfunctions are rooted in the interactions between the international system and national system one side and on the other side considering the national institutional and non-institutional structure which could determine a non inclusive type of economic growth (Adésìnà, 2007) and scarce human development.

3. The theoretical debate on the undesired effects of globalisation: a General Equilibrium Model approach

As previously discussed, although the three channels are theoretically expected to produce positive channels, in mainstream economics there are some models, such as the General Equilibrium Model approach, underlying how trade, FDI and aid may create undesired allocative effects to developing countries. In this brief section, we try to summarise the main findings of this literature, which we deem essential but still scratching only the surface of the problem.

One of the expected effect of huge foreign finance (aid and FDI) inflows is the appreciation of the real exchange rate, the so called 'Dutch Disease'. The channel for this effect to work is through the relative prices of internally-produced and consumed goods (non-tradables), *vis à vis* the price of import-substituting goods (tradables)[15]. When there is such appreciation, the result is a reduction of the price in domestic currency of imports and substitutes for imports, which causes a disincentive to produce tradable goods and a corresponding worsening in the trade balance.

Those countries that are dependent upon the export of natural resources are particularly prone to the Dutch disease. The vast inflows of foreign currency, determined by a sudden increase of the price of primary resources on international markets or a vigorous expansion of their production, produce sharp appreciations of the exchange rate. The Dutch disease caused by a large inflow of foreign currency produces three macroeconomic effects, that can be sequentially analysed: an "income effect", a "resource transfer effect", and a "substitution effect" (Corden e Neary, 1982; Nkusu, 2004). These allocative effects can be analysed using figure 3, depicting the changes in the structure of production and consumption following an inflow of foreign finance (Michaely, 1981).

Figure 3 – Effects of large foreign inflows on the economic structure of a small low-income country

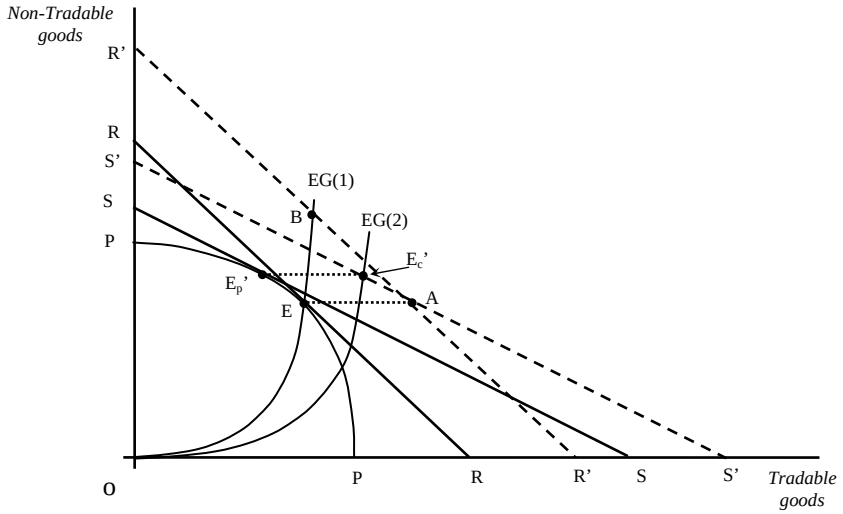


Figure 3 shows a stylised general equilibrium model of two sectors and two goods (tradables and non-tradables), whose quantity produced and consumed is depicted on the axes. To isolate the Dutch disease, we assume that the terms of trade of the representative country, i.e. the ratio between the price of exported goods and the price of import-substituting goods, are constant. The frontier **PP** constraints the country's productive possibilities. The initial equilibrium is **E**, where the national income constraints, RR, is tangent to the production possibilities frontier, given that we rule out capital flows and thus the trade relationships should be in balance. The Engel curve EG(1) represents the evolution of the preferred consumption bundle under increasing national income and constant prices. The position of **EG(1)** shows the population's preference for non-tradables: more income implies a growth in the ratio of consumed non-tradables over consumed tradables.

[15] The real exchange rate, called **e**, is usually defined as the nominal exchange rate, **E**, multiplied by the ratio between an index of foreign prices and an index of domestic prices, i.e. $\mathbf{e = EP^f / P^d}$. An alternative definition of real exchange rate, adopted herein, multiplies the nominal exchange rate by the ratio between the price of tradables and the price of non tradables, i.e. $\mathbf{e' = EP^T / P^{NT}}$. Notice that, given the foreign prices, **e** and **e'** will move in the same direction.

Initially, an inflow **EA** of foreign finance generates an increase in income, reflected in a right-hand shift of the income curve, to **R'R'**[16]. Given the domestic production, the total availability of goods for consumption is now located in point **A**, whereas the rise of domestic demand (the "income effect") on the **EG(1)** brings the bundle of goods effectively demanded to point **B**. Hence, there is an excess demand of non-tradables and an excess supply of tradables; this imbalance causes the appreciation of the real exchange rate, through a rise of the nominal exchange rate or a rise of the price for non-tradable goods, depending on the exchange rate regime adopted.
This effect is graphically represented by a change in the slope of the income curve, from **R'R'** to **S'S'**. The change of relative prices determines a reallocation of production factors from the sector of tradables to that of non-tradables (the "resource transfer effect"). This is represented by the new equilibrium from the supply side, point $\mathbf{E_p'}$, where the production possibilities frontier is tangent to the curve **SS**, parallel to **S'S'**. Therefore, the inflow of foreign finance unambiguously implies a contraction of the sector producing tradable goods, to the benefit of that producing non-tradables. The effects from the consumption side are, instead, undetermined. The higher relative price of non-tradable goods discourages the corresponding domestic demand, which now shifts towards tradable goods (the "substitution effect"). This is represented in figure 3 by the right-hand move of the Engel curve, from **EG(1)** to **EG(2)**: for every possible consumption level of non-tradable goods, the quantity of tradable goods demanded is higher. The new equilibrium is located in point $\mathbf{E_c'}$, where the ratio between the consumption of tradable goods and the consumption of non-tradable goods – represented by the slope of line not drawn passing through $\mathbf{OE_c'}$ – can be higher or lower than the same ration in point **E**.
Numerous empirical researches have tried to verify, for different countries and especially for foreign aid, if the above effects are effectively present and to what extent, but they have not reach unanimous conclusions (van Wijnbergen, 1985; White, Wignaraja, 1992; Younger, 1992; Bandara, 1995; Nyoni, 1998; Sackey, 2001). Those studies show that the existence and magnitude of the Dutch disease depend upon several factors, including the sector where the inflows are directed and the country's position in the international market. If foreign inflows bring about an increase in the productivity in exporting sectors where the country is price-taker, the result is a stronger international competitiveness. Similarly, when the foreign finance manages to reduce the supply bottlenecks, a deflation can occur, which contributes to mitigating the Dutch disease. Conversely, if the foreign inflow causes a boom in the production of a primary product for which the country is price maker, its terms of trade can sensibly worsen. Anyhow, the general principle of this class of models is unambiguous: beyond a certain threshold, specific for each economic system, growing inflows of foreign currency can provoke an appreciation of the real exchange rate and worsen the country's competitiveness.
Monetary authorities will have to lean against real currency appreciation in order to avoid penalising importing-competing industries and exporters outside the resource sector. A proper policy mix must be in place and fiscal authorities are required to limit public consumption to keep an eye on the price of non-tradable goods (Goldstein et al., 2006). Lance Taylor et al (2006) have recently criticized this type of model for their assumptions in evaluating the effects of trade liberalisation in term of benefits, e.g. fiscal position. The main limitation of this class of models is that the net impact of the above-mentioned effects varies from country to country and depends, as said, upon the structural characteristics of each of them. The deep features of a country also determine its peculiar response to an inflow of foreign currency, in terms of poverty reduction and modifications of the productive structure.
Chenery et al (1974) and more recently Basu (2006) have tried to model the economy by class of richness using the quintiles. In other words economic growth is given by the sum of the economic growth of each quintile. In both cases the poorest quintile is in extreme poverty and do not participate actively to the production of GDP in other words redistribution is needed. Although very challenging these models ask the wrong question. Have a more inclusive development or better human development means to let the poorest quintile to be part of the game. This can be done only if there is the willingness analyse the processes and to ask (this is the question) why the poorest are excluded by the system.

[16] Foreign inflows finance a corresponding deficit in the trade balance, allowing the country to consume a bundle of goods which is outside the possibilities frontier.

4. A structural and institutional approach

Misunderstanding the functioning of the African low-income economies is often connected to overlooking two other relevant aspects of these countries: the structural characteristics (e.g. the presence of a huge informal sector) and the institutional endowments and non-institutional resource endowments which affect their socio-economic system of development. In other words, neglecting the economic segmentation of African low-income economies and the institutional and non-institutional endowments which characterised them, means underestimating both the reality and the history – which are two basic dimensions for analysing an economic development process.
In the theoretical debate on the role of the informal sector in the development process "While the phrase 'informal sector' came onto development scene in 1972, its roots reach back into the economic development efforts of the 1950s and 1960s" (Bangasser, 2000, p. 2) and in particular, considering its inclusion in a macro development model, in the dualistic literature (Ranis 1988). Dualism relates to various asymmetries in organisation and production of the economic structure of developing countries composed by a traditional and a modern sector. In the dualistic models, the development was seen as an evolutionary process of a developing country into a 'modern economy': … a shift from the traditional or backward sector (subsistence agriculture, 'informal' sector) to the modern or 'advanced' sector (capitalistic, formal). The dynamic mechanism which brings to development process is given by the passage of resources from the 'traditional' sector to the 'modern' one. "It was axiomatic that, as 'take off' was achieved and the development process gained momentum, the 'modern sector' would gradually absorb them. So the 'problem' was only temporary" (Bangasser, 2000, p. 4).
Although we agree that the literature produced by Lewis and his successors captured very important characteristics of the traditional (informal) sector (Lewis 1954, p. 141) and dynamics of the labour market of developing countries -and later of the urban-rural migration phenomena (Todaro 1969)-, we argue that the dualistic models overlooked some relevant aspects. Indeed, -as field researches and empirical studies on the informal sector flourished in the 1970s- the dualistic models interpretation was debated and the interpretation of the informal sector and of the structure of the economy of developing countries disputed. In particular dualistic models can be criticised since they identify the function of the traditional (informal) sector in the economic system merely as a passive one with the labour force seen as reserve army, as a reservoir from which the expanding modern sector draws labour. Furthermore, in the dualistic models the traditional (informal) sector was depicted as an 'homogeneous' entity neglecting the peculiarities and differences within the sector (to some extent connected to the specific rural/urban location). From the point of view of policy implication, another main shortcoming of the dualistic models is probably the insufficient attention to the relevance of institutional and some non-institutional endowments overlooking their importance in economic development, and in particular in the labour transfer, hypothesising a perfect mobility of labour from the traditional to the modern sector. This is a relevant point, since the workers' decision (or the economic activities' decision) to locate themselves in one sector or sub-sector (e.g. rural/urban, traditional/modern) cannot be based explicitly only on expected earnings maximisation (profits) but also on institutional and non-institutional endowments.

4.1 A stylized structure of SSA economies

Labour market segmentation is a characteristic of SSA low-income economies, reflecting mainly unequal access to education and socio-economic opportunities and inequality in the distribution of assets among people and by the presence of different institutions. This type of economic activity is well typified by the dichotomies urban-rural and formal-informal. However, also within these economic activities it can be further differentiated. Therefore, in these economies the informal sector activities can be grouped into two parts: a large non-advanced component constituted mainly by subsistence agriculture and non-farm low income activities and an advanced component -with an higher growth potential- mainly constituted by micro and small enterprises both in urban and in rural areas. These dynamic informal activities, using labour intensive techniques, could be vital to the African development because of their potential in both employment and productivity increase (Volpi, 1994, p. 378; United Nations, 1996, p. 2). This "emerging" component, in

particular, can stimulate savings, new and latent entrepreneurial energies, absorb appropriate technology, enhance new techniques and convert local savings into local investments. Furthermore, a different picture on informal sector activity linkages is emerging also for SSA low-income economies.

In order to present a stylised economic structure of SSA low-income economies, the aspects previously examined are here specified. In particular, formal/informal dualism would be further refined taking into account other dichotomies and institutional and non-institutional endowments. Hence, these aspects would be incorporated in a general conceptual framework embracing the economy as a whole.
The institutional and non-institutional endowments are different in the sub-sectors of an economy and they often act as barriers which may influence the workers' wage level, wage rigidity and the rate of employment and urban/rural and formal/informal economic activities relationships and also market access.
The economic activities can be firstly divided, following the spatial location, between urban and rural areas. This partition not only depicts one of the most important features of developing countries, but it is very useful for policy implications (and for these reasons common in dualistic and migration models). Then, in urban and rural areas, the economic activities can be split in two sectors, the formal and the informal ones, and these in turn into advanced and non advanced sub-sectors, considering the labour productivity. This latter sub-division is very important because emphasises that in urban and rural areas formal and informal sectors have different characteristics within themselves, which is functional for the analysis of the development process. It is assumed that within informal non-advanced activities there is underemployment and disguised unemployment (while discouraged workers and/or open unemployment are excluded) due to the above mentioned institutional constraints and because of the high growth rate of the labour force, at a level that the development of the formal activities within the economic system cannot absorb all the available labour force.
In particular, considering the urban informal sector, following Ranis and Stewart (1995, p. 4-5) and as already argued, it is important to distinguish between a more productive and dynamic component and a traditional, relatively stagnant part of the sector, which more closely fits the customary image of the sector. There are, thus, two major types of activity: those we describe as 'traditional' (or non-dynamic, non-advanced) which have a very low level of capital formation, low labour productivity and incomes, very small size (three or less workers) and static technology, often organised at home. The other component of the informal sector consists of 'modern' activities (or dynamic, advanced), not rarely linked to the urban formal sector. "These typically are more dynamic in technology. This sub-sector tends to use more skilled labour, partly generated through learning and training activities; its labour productivity is higher, and some incomes, especially entrepreneurial incomes, can be substantial." (Ranis and Stewart, 1995, p. 5)
Hence, the urban economic activities can be divided among urban formal advanced activities (UFA), urban formal non-advanced activities (UFNA), urban informal advanced activities (UIA) and urban informal non-advanced activities (UINA).
- The urban formal advanced activities (UFA) sub-sector is mainly composed by large enterprises which tend to utilise capital intensive technologies (and which in an opened economy, especially if there are multinationals, usually expatriate profits and rarely reinvest in the local economy). The advanced formal sector is non neutral in the use of technology but is induced to use capital intensive techniques, thus giving a small contribution to the absorption of an increasing labour force.
- The urban formal non-advanced activities (UFNA) sub-sector is, generally, composed by small (and sometime medium-seized) enterprises which in general employ labour intensive methods of production. On average they have relatively lower labour productivity compared to the UFA. They are linked to the local economy and usually reinvest therein the profits realized.
The activities of urban formal sub-sectors pay taxes. Their workers receive a wage which is often higher than marginal productivity because of turnover costs and for the presence of institutional (social benefits for workers, unions action) and non-institutional resources endowments including human capital and better infrastructure for production.

- The urban informal advanced activities (UIA) sub-sector is composed by small and micro-enterprises especially in the manufacturing sector and forms the dynamic component of the informal sector. They tend to use local labour intensive methods of production and reinvest wage surplus into the local economy. On average their productivity is lower than those of the UFNA.
- The urban informal non-advanced activities (UINA) sub-sector is composed by micro-enterprises especially in services. It is the non-advanced part of the urban informal sector and essentially is often considered as "a sponge". Marginal productivity is very low (lower than UIA), there is the presence of disguised unemployment and the subsistence wage for all workers is reached only if there is sharing income within families or through informal social safety networks with a wage influenced by an antipoverty social norms

As already mentioned, the rural informal sector, as the urban one, has a dualistic structure. A dynamic component can be recognised in the informal advanced (non-subsistence) activities, while the non-dynamic or non-advanced is given by subsistence enterprises: formed by households or individuals in subsistence agriculture and/or in informal non-advanced off-farm activities or both. In this case households can be seen as multi-sectoral (in the traditional sense i.e. agricultural, industrial and services) micro-enterprises.

The rural economic activities can be divided into formal and informal sector and each is further separated into two sub-sectors. In this case the formal activities[17] are represented by rural formal large size activities (RFL) and by rural formal medium size activities (RFM); while the rural informal activities are divided between rural informal advanced activities (RIA) and rural informal non-advanced activities (RINA).

- The rural formal large activities (RFL) sub-sector is composed by large plantations and/or large farms (often linked to export crops, MNCs) or by off-farm large enterprises such as mining. The specific characteristics (derived from period of colonisation) are high profits (often exported) and low wages -often near the subsistence- for their employees "working poor". The average RFL wage can be taken as the regulatory wage.
- The rural formal medium-sized activities (RFM) sub-sector is composed mainly by medium-sized non-farm enterprises and farms (producing export crops and food crops). These activities have a relatively higher average income and quite often a higher labour productivity.
- The rural informal advanced activities (RIA) sub-sector is composed by non-farm small and micro-enterprises household and by small size farms (non-subsistence, commercial farmers) producing cash crops and food crops. These activities in general have a lower labour productivity than RFM.
- The rural informal non-advanced activities (RINA) sub-sector is composed by rural households conducting subsistence, semi-subsistence farming or non-farm activities or both (and this is also one reason why the subsistence household farming is classified together within the non-farm rural informal non-advanced activities). Marginal productivity is very low, there is the presence of disguised unemployment and the subsistence wage for all workers is reached only if there is sharing income within families (or throughout informal social safety networks). As for UINA discouraged and/or open unemployment is excluded.

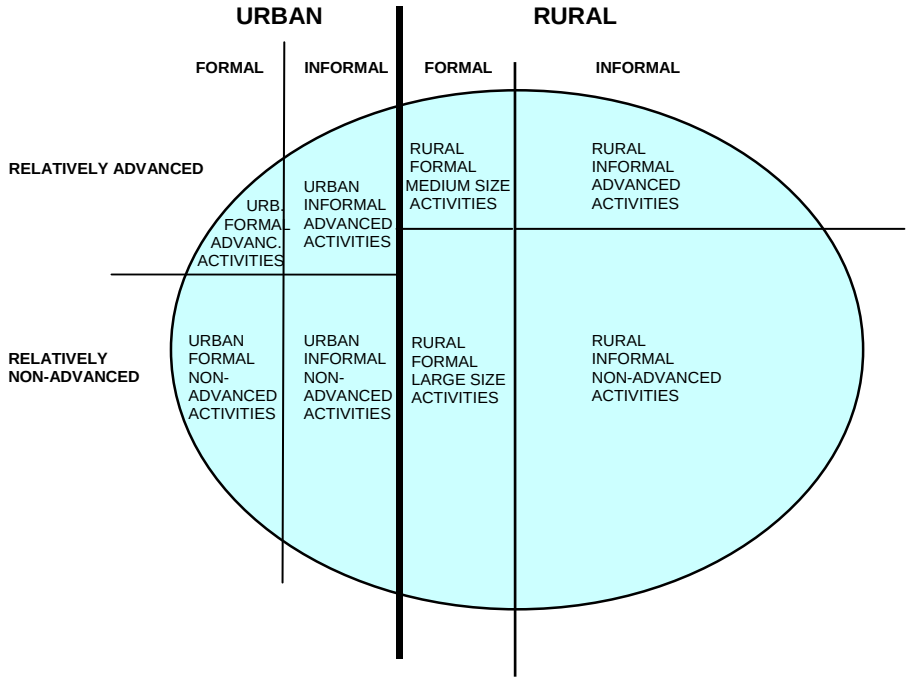
In particular, subsistence and semi-subsistence farm households agriculture, which form part of the rural informal sector, still produce with traditional techniques, recording a lower level of labour productivity and a high self-consumption. Often in the subsistence and semi-subsistence farm households wage is based on income sharing within the household (Ghatak and Ingersent, 1984). This brings to the fact that marginal productivity is often lower than wage. The reason is that the payment system is not based (and cannot be based) on marginal product (Ray, 1998, pp. 360-362). Low marginal productivity is mainly due to the typical vicious circle of poverty for low-income households and individuals –e.g. low investment, low demand (low income), low productivity because of low investment-. Farm households often suffer of risk aversion which is relevant in maintaining them within the poverty vicious circle.

Another important sector to be mentioned is the State sector. The State sector is composed both by the bureaucracy (civil servants) and workers in public enterprises. Its main characteristics are that it is part of the formal sector, mainly located in urban areas and it generally utilises labour intensive techniques of production. The average wages, for reasons connected to institutional and

[17] These are formal activities (enterprises) although they often use informal employees (without social protection).

non-institutional characteristics, are quite low but workers receive some benefits in terms of social protection, basic social services (and stability, fringe benefits) (Volpi, 1994). Although it is not considered as a sector *per se* in the model it would be mainly in UFA and UFNA sub-sectors.
Therefore, the economic activities can be partitioned into the eight sub-sectors above mentioned as reported in figure 4, which is a stylised representation of a SSA low-income economy. Indeed, economic activities as a whole can be seen as a lake, the presence of institutional and non-institutional borderlines is depicted by dams which separate the sub-sectors. The economic activities, which are in a more advanced sub-sector benefit of a better economic environment and resource endowments.
However, the structure of production of an economic system is just one side of the coin, the demand pattern is the other one. Indeed, as emphasised by many development economists, if the labour force consists of low productivity food farmers, with only a tiny surplus, the market for domestic goods (e.g. manufactures produced in the advanced formal sub-sector) is strictly limited. The importance of the demand intensity in determining the production, in the earlier phase of development (in a close economy), is well emphasised in the literature: there is no sense in increasing production if there is no demand for the product since this bring to over-production crises. For instance, in rural areas small scale non-farm enterprises production is strongly demand linked to agricultural earnings, and thus, in this case it is the agricultural income increase which can enlarge the demand as already discussed.

Figure 4. A stylised representation of a SSA low-income economy. The economic structure segmentation into economic activities is done considering work force partition (a).



(a) The areas are not indicative of the real size of the respective labour force.

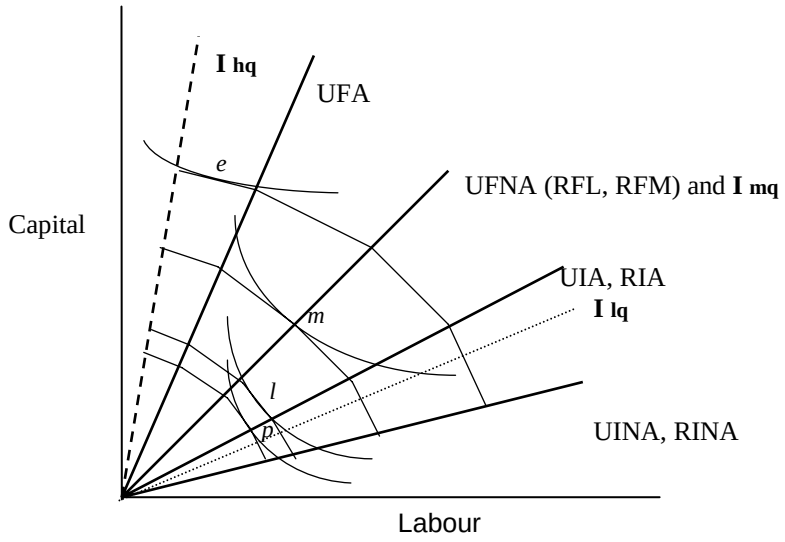
This section is concluded with some observations and characterisations of a simplified consumption structure which characterises the demand pattern of a SSA low-income economy.

It is assumed that everyone consumes and contributes to a part of the total demand, the kind and share of good consumed depends on wage level, and on the characteristic of the goods (e.g., expensive capital intensive products). The pattern of consumption, as emerged in many SSA studies, is as follows: the lower is the level of income of the class, the less capital intensive goods are consumed, the higher is the level of income of the class the more capital intensive goods (often non-tradable) are consumed and a smaller food share in consumption is registered as predicted by Engels' law.

Following Ranis and Stewart (1995), in figure 5 a simplified pattern of consumption with four different classes of income groups is represented for a SSA low-income country. There are four classes of income groups.

Therefore, the two classes of smallholders with low and very low income, which form the larger part of the population in SSA low-income economies, are more likely to spend on local non-tradable labour intensive goods and services. In particular, the very-low-income-class *p* is likely to spend mainly in the products of UIA, UINA, RIA and RINA sub-sectors and the low-income-class *l* in the same sub-sectors plus UFNA and RFM (please note self-consumption in RINA). While medium-class *m* is likely to spread the consumption among all sub-sectors. The elite-class *e* or richer households would tend to spend on items from the modern manufacturing sector often located in cities and produced usually in the UFA, UFNA, RFL, and RFM sub-sectors (or on imports I).

Figure 5. Simplified consumption structure and demand pattern for a SSA low-income country



I_{hq}, high quality and non labour intensive goods imported consumer goods
I_{mq}, medium quality imported consumer goods
I_{lq}, low quality and labour intensive imported consumer goods
UFA, consumer goods produced in the UFA sub-sector
UFNA (RFL, RFM), consumer goods produced in the UFNA (RFL, RFM) sub-sectors
UIA, RIA, consumer goods produced in the UIA, RIA sub-sectors
UINA, RINA, consumer goods produced in the UINA, RINA sub-sectors

e, elite-class equilibrium choice
m, middle-class equilibrium choice
l, low-income-class equilibrium choice
p, very-low-income-class (poor-class) equilibrium choice
Source: Our elaboration on Ranis and Stewart (1995) and Biggeri (2000).

The implications of these observations, given the structure of the SSA low-income economies, are important. A change that benefits informal/formal smallholders and their activities will have a greater impact on the local economy via consumption linkages and via production-investment linkages.

Imports of manufactured products on the one side increase the consumer well-being but on the other damage the internal producers due to harsher competition. For instance low quality/low cost products imported from China or other countries may crowd-out the local producers, not only in the formal sector but especially in the case of tradable goods produced also in the informal sub-sectors. As a results, those producers are penalized twice by the Dutch disease: first, because of the appreciation of the exchange rate, and second due to the lower price of goods (as Chinese ones) entering the market.

4.2. A stylised model on the impact of globalisation

In this section a development model for SSA low-income economies which includes the informal sector is presented. The purpose is to advance the debate on the possible role of the informal activities and particularly of small enterprises in the development process of SSA low-income countries and to examine the growth process from a poverty reduction and human development perspective in order to determine policy implications.

The model presented evolves from the cornerstone idea of the dualistic approach, based on the different productivity of labour between an advanced and a non-advanced sectors[18]. The model, however, differs substantially from dualistic models for some key assumptions and for the fact that the development mechanism is determined not only by the market force but also by the presence of institutional endowments and non-institutional resource endowments and by the investment decisions of policy makers and thus in definitive by factors endogenous to the economic system.

First of all, it is assumed that the economic system of SSA low-income countries is composed by more than two sectors, presenting a more complex and segmented economic structure. Then, the economic system presents within each sub-sectors institutional endowments and non-institutional resource endowments. Borderlines can be virtually identified between the sub-sector which allow for different wages among sub-sectors and, within the some sub-sectors, for wages higher than the marginal productivity of labour as well as for wage rigidities, thus influencing the employment rate of the labour force. Institutional and non institutional endowments may be seen as imposing severe costs to the economic system or as opportunity for the development process. These institutional endowments can be formal and informal and while non-institutional endowments are human, physical capital and services such as education, training, sanitation and other facilities, such as infrastructure facilities, credit, … .

Hence, the model attempts to consider simultaneously both dualistic aspects and other structural characteristics of SSA low-income economies. The low-income economy is close and divided into the eight sub-sectors previously described:

The economy is characterised by disguised unemployment in the urban and rural non-advanced informal activities (the discouraged or open unemployment is excluded).

The main assumptions on the sub-sectors characteristics are summarised in the following points:

1. The average workers wage (income) differs between sub-sectors and the order is: $w_{UFA} > w_{UFNA} > w_{UIA} > w_{UINA}$ in the urban area, and $w_{RFM} > w_{RIA} > w_{RFL} >= w_{RINA}$ in the rural one.
2. In particular, the three sub-sectors UINA, RFL and RINA have a wage level (w_{UINA}, w_{RINA}, w_{RFL}) nearby the subsistence wage w. The RFL is the regulatory wage (relevant for urban/rural migration).
3. Marginal productivity of labour is different among sub-sectors. In particular, UFA>UFNA>=UIA>UINA and RFM>RIA>RFL>=RINA.
4. The average wages, for reasons connected to institutional and non-institutional characteristics, are not equal to the respective marginal productivity of labour in the following sub-sectors UFA, UFNA, UINA and RINA. For instance, this could be due, for UFA and UFNA sub-sectors, to labour turnover costs and to allowances (or trade unions interventions), while for UINA and RINA sub-sectors to income sharing (Basu, 1997)[19].
5. Production techniques used vary between the eight sub-sectors. Capital intensive production techniques (capital labour ratio) decrease in the urban areas from UFA to UINA sub-sectors (UFA>UFNA>UIA>UINA), while in the rural areas the situation is (RFL>=<RFM)>RIA>RINA.

[18] "This question of marginal productivity has not gained close attention, although it has been raised in a theoretical way by Mazumdar (1976). Mazumdar produced a two sector model of an urban economy which held the prediction that the income differential between the formal and informal sectors will widen over time as informal sector income is blocked among an ever growing informal sector labour force. The same phenomenon could apply in the rural areas with respect to nonfarm activities and indeed is likely to apply there more directly" (Livingstone, 1991, p. 665).

[19] As in Mazumdar (1976, p. 676) the idea is that in some sector the wages are held at a high level by institutional forces and then that at the same time the institutional factors and non-institutional-factors ensure that only a certain proportion of the labour force is able to obtain employment in those sectors. On the difference on wages among sectors Mazumadar (1983, p. 256).

6. The new technology employed in the UFA sub-sector is biased towards capital intensive techniques and it is neutral for the other sub-sectors.
7. Everyone consumes and forms part of the total demand, the kind and share of consumer goods depend on wage level, following the consumption pattern already described (in section 3): the lower is the level of income of the class, the less capital intensive goods are consumed, higher is the level of income of the class more capital intensive goods are consumed.

The economy, given the assumptions made so far, can be represented as in figure 4a. This figure reports a "snapshot view" of a closed SSA low-income economic system when the development process is already in operation.

In the horizontal axe, the total labour force L of the closed economy is reported. The economic activities are divided into urban and rural activities in base of their spatial location. Then, each urban economic activity is further divided considering the classification of the four urban sub-sectors. The same is done for the rural economy. Therefore, each sub-sector is represented with its own labour employed. It is worthwhile to remember that an employee is into a sub-sector if is employed by a generic economic activity operating in that sector[20].

In the *x* axis two main "origins" are given: on the right there is the origin of the urban areas activities o_U, while on the left there is the origin of the rural areas activities o_R. Urban and rural areas are divided by a barrier $b_{U/R}$. From the origin o_U to the right till $b_{U/R}$ are reported the urban economic activities and the relative labour force. In particular, the UFA and its relative engaged labour force till the point o_1 from which the UFNA sub-sector starts finishing at o_2. In the same direction it is followed by the UIA sub-sector till o_3 and there on by the activities of the UINA till $b_{U/R}$. From the origin of the rural areas o_R to the left till point o_4 can be found the RFM activities with the relative work force, followed by the RIA sub-sector (till point o_5), the RINA (among o_5 to o_6). Finally from the point o_6 to the vertical axis $b_{U/R}$ there are the RFL activities and their relative workers engaged. Among each area and each sub-sector there are borderlines -the six vertical lines (b_1, b_2, b_3, b_4, b_5 and b_6)- which divide the economy into segmented sub-sectors with different institutional endowments and non institutional resource endowments, which in turn influence the wages level (and their rigidity) and the rate of employment and determine for each sub-sector a different "economic environment".

In the vertical axis *y*, the marginal productivity of labour (MP), and the wages (W) (average income level for each sub-sector) are measured at constant prices.

Let *w* be the subsistence wage level in the economy. Each sub-sector has its own wage level. In particular, they are w_{UFA}, w_{UFNA}, w_{UIA}, w_{UINA}, w_{RFM}, w_{RIA}, w_{RINA}, w_{RFL} with the last three close to the subsistence wage *w*. The wage bill of each sub-sector is given by the area under the wage horizontal lines. The dotted lines underline when the average wage is different from the marginal productivity.

The curves of the marginal productivity of labour are reported for each sub-sector. Therefore, the margin available to reinvest (surplus on wage bill or profit) for each sub-sector is given by the respective area under marginal productivity curve minus the wage bill of the sub-sector.

The functioning mechanism of the model is as follows. Each period the surplus of each sub-sector is reinvested in the same sub-sector -where is created[21]- to respond to the potential demand for products. The expansion of capital, given the capital labour ratio, brings to an expansion in the demand for labour. Demand of labour is generated by the potential demand for products[22]. In other words the potential demand must coincide with the real demand for products and with the demand expected by producers (economic activities) for their products. The pattern of production adjusts itself to the pattern of demand and vice-versa.

This means that after a period of time each marginal revenues curves coincides with the respective new marginal productivity curve (which measure the increase in the value of output at constant price) only if there is a increase in demand for the products that does not change the relative prices

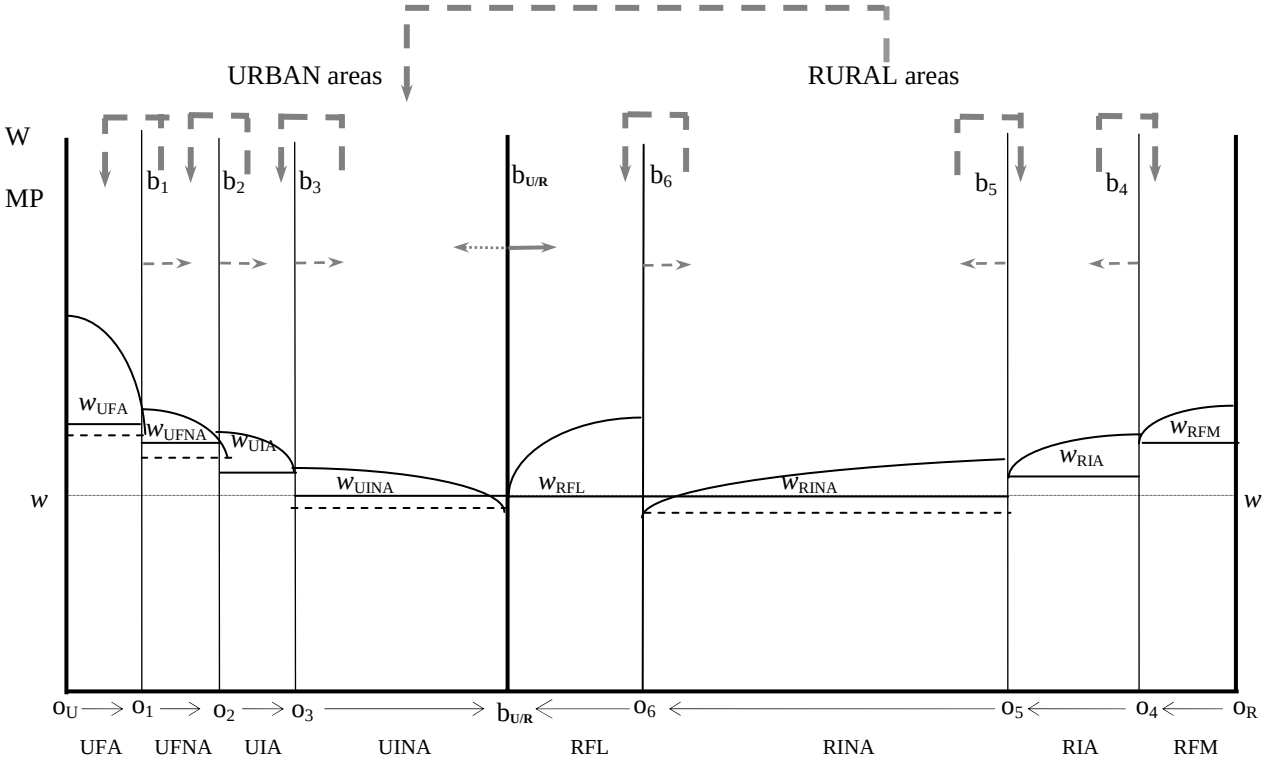
[20] For instance, although a worker is not regularly engaged by a urban formal advanced activity (enterprise) is accounted to be part of the UFA sub-sector.

[21] It is assumed that economic activities reinvest or invest in new activity in the economic environment they know better: the one where they are active. Part of the profits can be used differently i.e. in other un-productive use of resources generated (e.g. corruption, bribes, …) and not reinvested.

[22] Potential demand depends on the structure and the income level of a society, on income consumption pattern as described in figure 3.

(Spaventa, 1959, p. 405-408). In order to induce an increase in productivity maintaining the same conditions there is the need of a demand equal to the expected demand for the products of the sub-sectors, considered that otherwise the change in relative price of factors and products would kill the gain in productivity. Demand stimulus will lead to real income growth or to the choking off of growth through rising relative prices of wages goods.
Therefore, if the surplus on wages of each sub-sector is reinvested -shifting up to the right (or the left if in the opposite direction as in figure 6a) the marginal productivity curve of labour- and the employment will increase in the sub-sector. This will bring to the absorption of labour in the advanced sector from the non-advanced one[23].

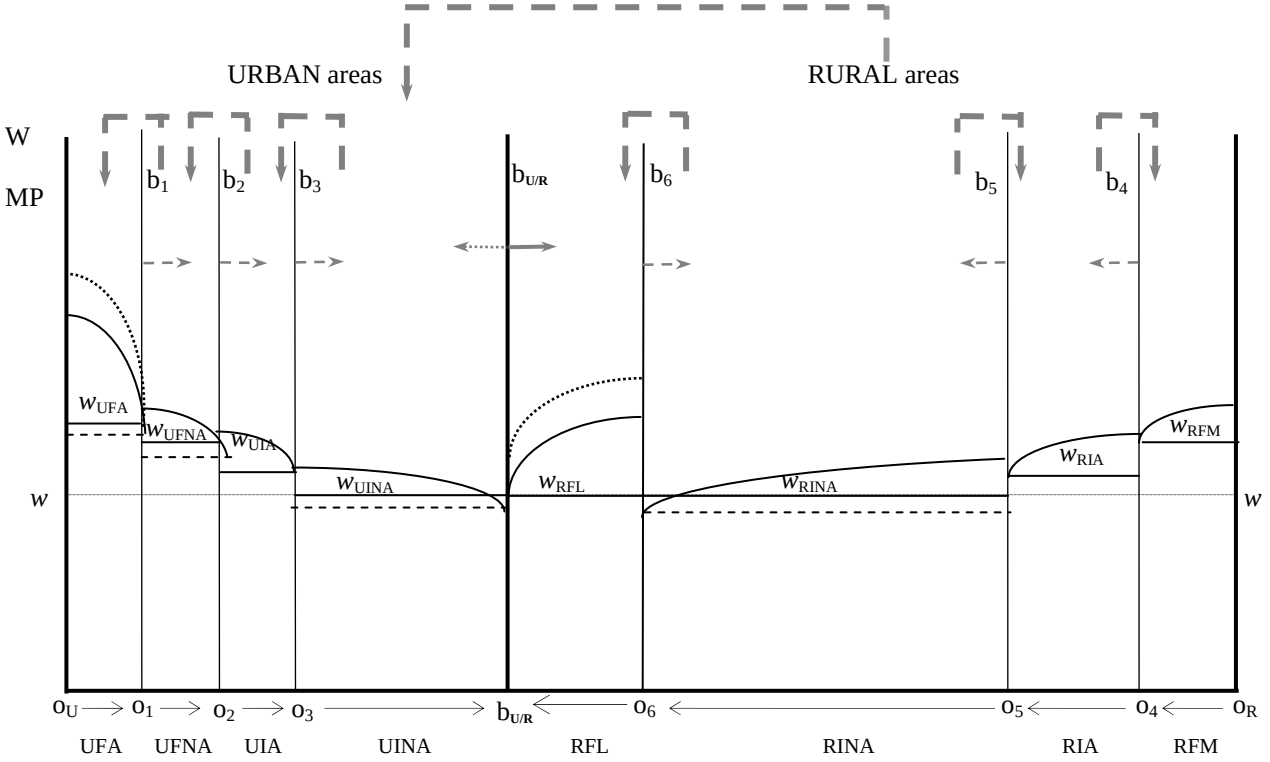
Figure 6a. Institutional and non-institutional barriers and development



The new marginal productivity curve of labour of each sub-sector will be parallel to the respective old one, if the technical progress is neutral. While, if the capital investment are not reinvested in neutral technology, but the capital labour ratio changes and it is biased to capital intensive techniques, as in the UFA sub-sector, the marginal productivity curve of labour does not shift parallel to the right. Hence, over time there is the tendency to use more capital intensive techniques, instead of employment creation, there could be a labour displacement which would aggravate problems of disguised unemployment. This, given the rigidity of the wages, can determine an increase on the value added just by an increase in profits. “Such a state may be described as growth of national income due to rise in capital accumulation without real development.” (Ghatak and Ingersent, 1984, p. 104). It is a growth with increasing inequality, where large part of the population is excluded from the economic system or marginalised by it. Opposite to the growth without development -the ones described above- a growth with development is based on an increase in the productivity in the informal sector segments of the economy. This is case of the actual African economic growth in sector of mining and extraction or large agricultural enterprises as represented in figure 6b. The economic growth is spurred in these sector without involving the mass of the people that often lack opportunities for generating income. Due to the tradable vs. non-tradable relationships (see previous sections), the rest of the economy remains at best stagnant, as the demand is satisfied by foreign products.

[23] The process, in dualistic models at a constant capital labour ratio, goes on until the point when all the excess of labour forces is absorbed and the disguised unemployment falls to zero. In SSA low-income economies the labour force increases at very high rate especially in the sectors of low-income people.

Figure 6b. Institutional and non-institutional barriers and development



Given that economic growth *per se* would leave marginalized a large fraction of the population, it is clear that an intervention is needed, otherwise the "high economic growth with poverty" will rest a reality.

However, in this model the development path is given, not only by the characteristics of the new technology employed but, also, by the presence in the economy of the above mentioned different institutional endowments. Indeed, the development is constrained by the "technical" absorbing capacity to increase productivity which can be defined absorption of technological progress by 'creating the capacities'. This development process -dynamic and cumulative- should be accompanied, if not anticipated by the institutional change and investment in non-institutional factors[24].

In other words the enlargement of the sub-sector employees can be generated also by a change of institutional factors (and accompanied by the movement of the barriers and the entrance of the new employees in the sub-sector) only if it is accompanied by an improvement of the non-institutional factors endowments. This can be seen as an expansion of human development. Thus, only in this case the movement of labour force can be implemented (dotted arrows). In other words the development is facilitated by the adjustment of human capital, services, and infrastructure as well as of institutions. For instance, an unskilled worker of the UINA sub-sector can pass to the UFNA sub-sector only if trained. It is expected a passage from rural to urban areas although the reverse could occur in some specific circumstances[25].

In this model, the growth of the value added, in the presence of wages rigidity, can be obtained in two different ways within each segment of the economy:

1. by an increase in profits through the reinvestment of the margin with the increase (shift) in marginal productivity curve of labour (within each segment of the economy.);

[24] Conflicts (national/international, ethnic/non-ethnic or religious/non-religious), pandemics (as Hiv-Aids) and natural disasters (also human provoked) are among the main enemy to the development process (moving the barriers in the opposite direction) damaging the sub-sectors economic environments since institutional and non-institutional factors are cumulative and path dependent by nature.

[25] In China during the recession (in 1989 and 1990) rural labour migrants moved back from urban to rural areas because of the land use right (safety nets). In some circumstance 'inverse' movement could be connected to conflicts urban to rural.

2. by a change in institutional endowments and by an increase in non-institutional resource endowments (movement of the borderlines or within them).
These movements permit:
a) to increase the value added by the wage bill increase through the income increases of the labour force absorbed by the relatively more advanced sub-sector;
b) to increase marginal productivity of labour, not due to reinvestment of profits, but through externalities derived by overcoming some barriers through institutional and non-institutional adjustments, including collective action, organisation of production, synergies among basic social services.
c) to increase directly the value added if some institutional constraints are removed.
The point a) is self-explaining and does not need any further explanations. Different is the case of the last two points containing some important aspects.
The marginal productivity of labour or simply the productivity (considering the constant wages) can increase in different manners and not just by increase in capital investments (point b); for instance, through changes in attitudes (e.g. by indirect externalities; risk aversion reduction and, consequently, new allocation of resources), by increasing incentives, by different organisation of work (e.g. from subsistence household farming to co-operative or collective tribal farming; through economies of scale or scope), by a better allocation of existing resources (differentiating production), by enhancing collective efficiency (positive externalities in medium, small and micro-enterprise activities). In other words it is possible to improve the productivity by the co-ordination of activities and by taking into account the benefits of positive externalities and spillovers. The positive externalities are strongly connected with the social overhead capital and BSS which facilitate development through the diffusion of technological progress. Human capital and physical infrastructure are fundamental in this process. The point b) can occur in sector with disguised unemployment, also without any movement of the barriers, by the increase of the marginal productivity curves of labour not due to margin reinvestment, e.g. a better allocation of existing resources (differentiating production)[26]. Very important becomes the diversification as well as the synergies in the system, since they generate important dynamic contribution.
The last point c) reminds that institutions (formal and informal) can influence both the level and the pace of economic development. Changes in institutions may change the position of an economic activity (e.g. from the UIA sub-sector to the UFNA sub-sector). For instance, “Informal constraints embedded in norms and networks, operating in the shadows of formal organizational rules, can both limit and facilitate economic action” (Nee V. 1998, p. 85).
By underlining the structure and the institutional constrains, the model presented herein shows that it is difficult, for a SSA low income economy, to benefit from the high rate of growth if it due to ‘resurgence’ of globalisation in specific sectors. Fir this reason, proactive policies become a necessary condition for pursuing human development.

[26] These aspects can be enhanced together and are often self-sustaining. For example, in farming, the reduction of risk aversion could bring to different resource allocation, to the abandonment or to an improvement of a wrong or scarce technique, to different organisation of production and thus increase the opportunities and in the end to a further reduction of risk aversion.

5. The policy implications for human development

The analysis presented in the previous section emphasises that the economy of SSA low-income countries is segmented and that the development process is determined by investment and by institutional endowments and non-institutional endowments changes within each sub-sector. In this context dynamic dualism designates a tendency towards uneven growth and social outcomes.
In particular, the positive effect of the higher growth generated export of natural resources of SSA economies is not taken by the rest of the economy because of the "structural dis-articulation" of the production system and do not create job opportunities. This is due to the fact that excess labour force supply from the non-advanced sub-sectors is not absorbed by capital accumulation in the export sectors (also for the capital intensive techniques argument mentioned above). According to Goldstein et al. (2006), in order to avoid the Dutch disease, resource-rich Africa needs to find ways to capitalise on windfall gains arising from resource extraction and promote job-rich sectors.
All this means for Africa that fostering economic growth *per se* may determine low results in terms of human development.
"Human development is a goal, an objective and an aspiration. The goal gives salience to the well-being of the individual and the individual's full participation in society. It is a goal towards which economic policies should lead. […] This notion is firmly grounded in the capabilities approach (Sen, 1982, 1985; Nussbaum, 2000). It requires an explicit and constant recognition of the need to integrate economic and social policy, which alone will ensure the goals of human development." (Mehrotra and Delamonica, 2007, p.1 initial sentence)[27]
Sen (1999) has argued that for many evaluative purposes, the appropriate 'space' is that of substantive freedoms and capabilities. Therefore, those elements that influence human development and the capability dimensions of it, such as health, education (and access to Basic Social Services –BSS- in general), social insurance, equity, environmental protection and social environment or integration (a mixture of equity/cohesion) should be part of the analysis.
In order to analyse the relationship between economic growth and social outcomes, which are both part of human development, we outline a two synergy approach, firstly introduced by Mehrotra and Jolly (1997) and Taylor et al. (1997), thought to implement an interpretative framework for guiding and evaluating the impact of policies in terms of human development.
The idea is based on the existence of synergies in policy implementation between social and economic outcomes (see for instance Mehrotra and Delamonica 2007, and Mehrotra and Biggeri, 2007). In our view, pursuing the synergies between the two sets of interventions can significantly enhance human capabilities and promote economic growth (Mehrotra, 2004; Taylor et al, 1997).
The first synergy is between interventions within basic social services (BSS) – basic education, basic health, water and sanitation, and nutrition which result in achieved functionings). Interventions in health, nutrition, water and sanitation, fertility control and education complement each other. This increases the impact of any one from investments in any other. This can be considered the social outcomes dimensions (Mehrotra and Biggeri, 2007).
The second synergy is between income increase, its better dispersal, and health and education outcomes.[28] After a certain threshold, a continuous improvement in health and education indicators may be unachievable in the absence of income growth, just as sustained growth would be impossible without at least a minimally educated and healthy workforce (this is in theory well-recognized but Africa seems to show a different pattern). At the same time, at the macro-economic level it is critical to promote economic growth of the kind that improves the income distribution in favour of the poorest. This is the essence of the second synergy – the interaction among income-

[27] "The poor should not have to wait for the benefits of economic growth. We do not downplay economic growth; but as economic growth is such a predominant part of the orthodox paradigm, the pace at which social outcomes improve appears to be at a discount. A synergy exists between poverty-reduction, enhancement of functionings and economic growth, which does not put increasing the growth rate on a pedestal higher than the other two variables (i.e. enhancement of functionings and direct poverty reduction). Instead, it calls for the integration of social and economic policy – with the main instruments in the hands of the state being consistent fiscal and macroeconomic policies, which promote all three desired objectives or ends simultaneously." (Mehrotra and Delamonica, 2007, p. 40)

[28] Note that the first synergy is really a sub-set of the second synergy, but it is critical to distinguish between the two conceptually, since in reality, the first set of synergies in being a goal per se can be set in motion without necessarily the second set of synergies actually being in place. However, in the long run, there is a strong risk of the first set of synergies 'running out of steam' in the absence of the second set of synergies (Mehrotra and Biggeri, 2007).

poverty reduction, the quality of human functionings at the aggregate societal level, and economic growth.[29]

"To summarize, there are two synergies present. One takes place at the macro-level among income-poverty reduction, expansion of human functioning and economic growth. The other synergy of outcomes, at the micro-level, occurs as a result of interventions to provide the basic social services that are the foundation of expansion of functionings. These two synergies are linked by the synergies among good health, nutrition and education – which are ends in themselves, but also means to other ends at a macro-societal level, and hence common to both sets of synergies." (Mehrotra and Delamonica, 2007, p.1) This conceptually underlines the need to integrate social-sector policies with macroeconomic ones while "The separation of the 'economic' from the 'social' discourse is inherent in the leader–follower hierarchy model of the orthodox policy recommendations. … In such circumstances, Social Funds and education and health ministries are left to take care of the consequences of macroeconomic policy mistakes – essentially, to pick up the pieces." (Mehrotra and Delamonica, 2007, p. 14).

In principle, the results can be measurable in terms of economic and social outcomes.

In this section we argue that through social and economic sustainable outcomes it is possible to measure the country progress towards human development.

We can further develop this theoretical framework by using the distinction made by Mehrotra and Biggeri (2007, chp. 11) for the development of local system of production between the high road, the low road and the dirt road.

In order to examine better the different pattern of country progresses and to understand the possible routes or strategies of development that can be pursued to up-grade a dirt road level of development.

Figure 7 describes the different situations that can be found in developed and developing countries and strategic routes that they may follow in their development. The framework is based on two dimensions: economic outcomes and social outcomes. The nine cells in the matrix illustrate the combination of these two dimensions.

It is evident that a country although in the same road category can have a different level for each dimension. For instance, the Dirt Road 1, the worst level of human development, has a very low level of economic and social outcomes. This Road is typical of some African countries during structural adjustment. It is often characterised by low level of economic growth and no or insufficient social and environmental protection.

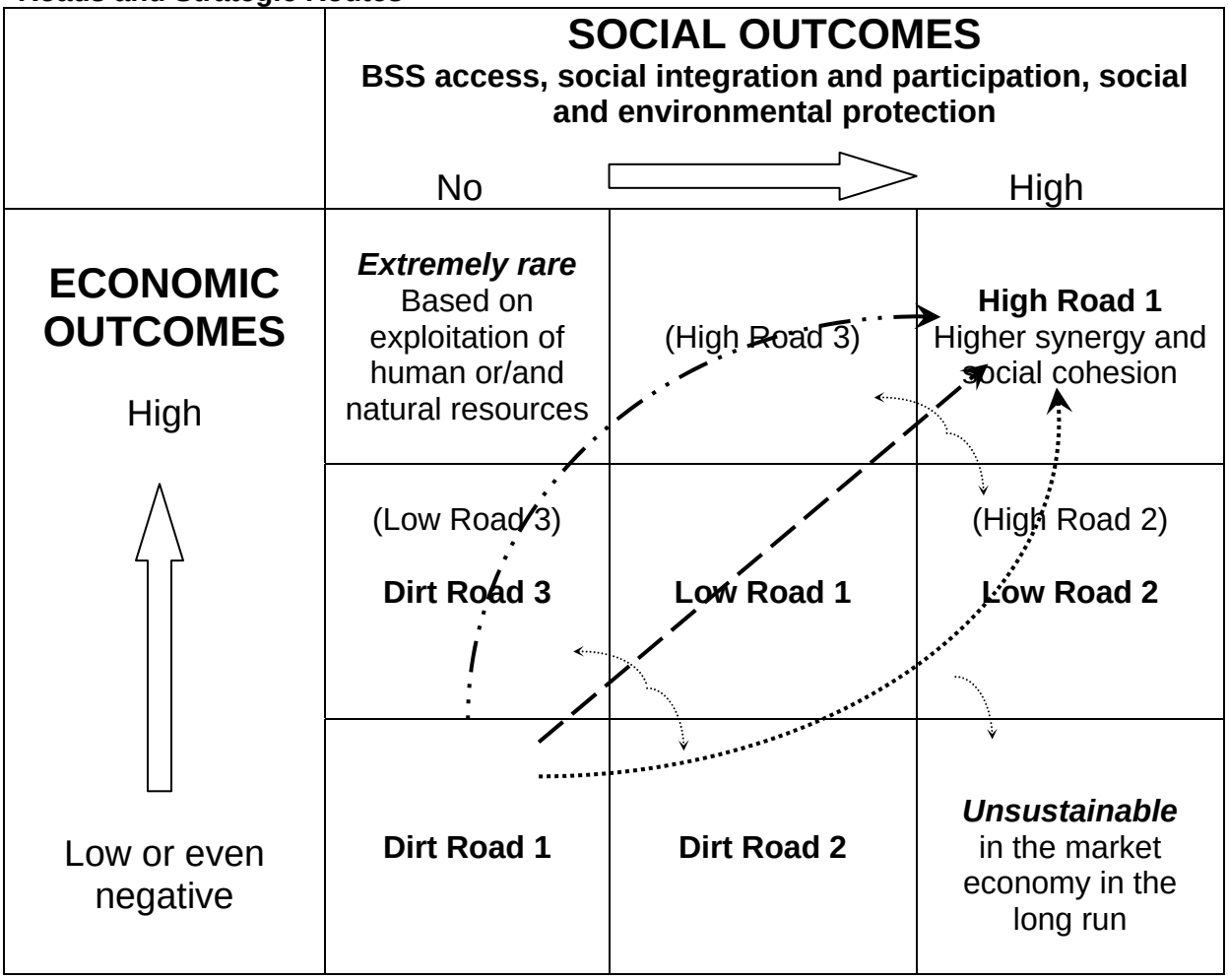
The other squares of Figure 7 depict the level of human development. The Low Roads, according to the different intensity of the two dimensions under analysis, can present medium economic outcomes combined with low social development (Low Road 3), as in most high growth African countries, or the opposite (high social development) which is typical of declining economy in developed countries (Low Road 2). Even the High Roads can be classified according to the level of both dimensions. The High Road 1 – on top right – is the best case scenario. Countries positioned in the High Road 1 are mainly from developed countries and rarely some developing countries. And it concerns *local* development because the strategic factors consist of progressive relations between production side and social outcomes improvements. Social progress, however, is usually the result of a conscious co-ordination among policy makers at different level. It requires genuinely shared objectives, as well as a satisfactory distribution of income among the parties involved (fundamental for the renewal of the system) and a satisfactory standard of living, which is fundamental to promote co-operative labour and supplier relations.

There are two cases that can be considered as extremes. The top left corner is the case of a country which for international or domestic competition and institutional mechanisms presents high economic outcomes but accompanied by a very low or no social development. This was an extremely rare case is becoming more frequent under globalisation. For instance, several African countries are a typical example, where there are countries that show at the same time the highest rate of economic growth and the lowest social outcomes. International competition and local institutions which allow low income and minimal worker rights, induce a vicious circle and negative outcomes of the delocalization of production (the race to the bottom with high profits for investors).

[29] For a detailed elaboration of this dual synergy model, see Mehrotra and Delamonica (2007).

In this situation workers serve as a 'reserve army of labour', in a Marxian sense and the natural resources are the object of attention.
It is evident that a country although in the same road category can have a different level for each dimension. For instance, the Dirt Road 1, the worst level of human development, has a very low level of economic and social outcomes. This Road is typical of some African countries during structural adjustment. It is often characterised by low level of economic growth and no or insufficient social and environmental protection.

Figure 7. Human Development and Poverty Reduction: High Road, Low Roads and Dirt Roads and Strategic Routes



The two synergies strategic route 1
Alternative SO dominant strategic route 2
Alternative EO dominant strategic route 3
e.g. Deviations

Notes: SO= Social Outcomes; EO= Economic Outcomes; BSS=Basic social services.

Source: Our elaboration on Mehrotra and Biggeri (2007)

The framework presented facilitates understanding the weakness and the threats of a development process in itself and helps to explain the potential strategic routes to up-grade the country social and economic systems. The transition from one stage of development to a better one is not an easy task, and retrogression can occur. Nonetheless, having in mind the possible directions that a development process can take will definitely help devising better policies.
The strategic route 1 one that we have called of the two synergies is a Marshall plan in action. Here, much more benefits from economic growth are driven to enhance social outcomes and social outcomes reinforce economic outcomes. In order to have this type of synergy large part of the population as to become part of the production process.

Following the strategy outlined, we can derive clear policy implications.
Investment to improve the access to basic social services BSS to improve social outcomes are at the base of this strategy together with a rethinking of the economic development process. According to the literature the financing and the delivery of BSS is key response (Mehrotra and Delamonica, 2007; Harrington et. al. 2001).
Our concern is, however, more on finding an alternative development path able to obtain growth with human development and to allow poor to be involved in economic activities and to have the opportunity to participate to economic development as producers and consumers. Sectors with substantial linkages (i.e. articulated in the economic system) should be preferred, since they are likely to contribute more to development than just the immediate value added and employment they generate (Livingstone, 1991, p. 665). In countries such as SSA low-income countries where there is disguised unemployment and capital is a scarce factor, economic activities with labour intensive technologies should be considered a milestone and preferred as starting point. Therefore, as already emerged in the literature, an 'alternative road' could be the development through medium, small, and micro enterprise within the formal (ILO, UNIDO) and informal sub-sectors (ILO, FAO). Medium, small and micro-enterprise activities -in the model the UFNA, UIA, RFM and RIA sub-sectors- can foster positive externalities and offer many potential linkages between and within urban and rural areas and formal/informal sub-sectors. On that account, this 'alternative road' would benefit local economic development in terms of employment and investment, and through consumption linkages generated[30].
Obviously, there can be a number of problems in implementing this type of development strategy through micro, small and medium enterprises. From many studies also emerge that the problem in SSA is mainly connected not only to low savings and investment but also to demand constraints (Delgado et al. 1998, Yong He 1994)[31].
The increase of the demand of local good and services would foster entrepreneurs' incentives and would be a key to bring an increase in productivity, technology upgrading, and a different mode of organisation of production gaining in economies of scale and externalities. SSA low-income economies are composed mainly by poor (low-income families) and scarce infrastructure which imply that the potential demand could be un-capable to sustain or maintain the supply -bringing to over-production crises-. The internal demand would remain scarce if the work force, which is mainly concentrated in the subsistence sub-sectors UINA and RINA, will not be better off, in so increasing consumption of local goods and services and investment in local activities. Thus, these informal low-income activities need to increase productivity. The benefits in subsistence and semi-subsistence agriculture would be direct, since an increase in productivity of food crops could bring to a change in the attitude (through risk reduction) of farmers enabling them to allocate better the resources and escaping poverty trap in connection to more opportunities of income diversification (also through non-farm activities). Low productivity depends on lack of incentives (demand) and especially poor techniques and organisation methods. Extension services and infrastructure can be fundamental to solve these problems[32].

[30] Another possible road could be the export led-growth and FDI. As Lewis argues, "If 70 percent of the labour force consists of low productivity food farmers, with only a tiny surplus, the market for domestic manufactures is strictly limited. As the limits are approached, the pace of industrialisation can be maintained only by exporting manufactures. … (Lewis, 1977, p. 31-32). Although it is not a immediate solution for SSA low-income countries could became a complementary strategy especially if pursued with small and medium enterprises. Otherwise it would be very difficult to diffuse the welfare and technology and although the GDP may increase substantially most of the population would not receive any benefits (apart in the form of tax revenues and wages). For instance, the UFA sector is usually connected with exports through multinationals which expatriate profits, usually do not invest in local economies and use capital intensive technology and/or pay low wages, while the RFL, which export agricultural exotic product and raw materials (from colonialism), main contribution is towards wage (very low). In this second case most of the population working in the informal sub-sectors would remains poor or stagnating with low productivity and disguised unemployment or would be used by globalisation without getting any benefit from growth taking place in the rest of the world economy.

[31] Furthermore, in general many SSA countries emerges that political instability (including conflicts), and corruption have a negative impact on development and employment generation.

[32] Furthermore, research at national and international level should concentrate on these sector to ameliorate the inputs and the techniques of production for small scale production (scale neutral input and techniques for small agriculture and other micro-enterprises) enhancing local factor endowments (Cornia 1994). Moreover, "technical change in agriculture that benefits smallholders will have a greater impact on the local economy via expenditure linkages than would technical change that benefits large landholders." (FAO, 1998, p. 289).

An important dimension of sectoral policies should deal with the transfer of public resources and the removal of discriminatory practices and regulations to improve the productivity of workers. For small and micro-enterprises access to credit, infrastructure, education and training are the base of a development strategy since they can solve production difficulties including demand delivery (of quality and quantity) on time. Credit facilities and especially access to credit for smallholder would be crucial. Investment for the provision of basic infrastructure (like water, electricity, good roads, telephones, etc) facilitates the development process of small enterprises and contribute to improving productivity and the working conditions of the informal and informal and micro and SMEs. Therefore, they would benefit from public policy in terms of, investment in infrastructure, marketing facilities, and services and information network. Education policies and training courses would improve labour force skills and managerial capacities; demonstration and local research centres could be fundamental for technological up-grading[33]. Furthermore, local policies on family planning, health and sanitation would ameliorate the environment and the capabilities of the workers.

Bottom-up institutional innovations should be encouraged, promoting and strengthening informal sector organisations, so as to prompt local collective action[34]. Pooling of community resources could be the way to increase the business opportunities and to reduce individual risk (sharing it in the community), at the same time permitting better organisation and participation. Co-operatives can be fundamental in overcoming individual investment constraints, while services centres for the informal sector can favour the concentration of enterprises into particular areas, in order to capture any positive externalities that may result as a consequence, and try to implement a virtuous circle and a high road of development. For instance, if there is scarce entrepreneurial capacity, because of scarce risk propensity, co-operatives, collective (village) and local government actions and investment should intervene. This means that there is not a unique response to institutional constraints which in different contexts need different answers.

Decentralisation measures would help the participation in decision making, especially through the 'voice' in the management, more control over corruption and change of institutions. Endogenous development is connected to the evolution of institutions, thus participation of population would be fundamental in determining the success of institutional reforms. ONG role could be relevant in accompanying local institutional arrangement changes increasing the civil society participation to local development.

As the number of small enterprises increases, spill-over effects arising from the creation of positive externalities are spread throughout local economic systems, the resulting multiplier effect having an enhancing effect on local development (Volpi, 2002). At this point a further stage is necessary: micro and small enterprises dealing often with non tradable goods can survive from globalisation, but at the same time are relegated to the local market. Some degree of protection and/or export promotion could be helpful in these cases, especially if there is the potential to create positive externalities and synergies, outside the natural resource sector[35]. The potential in economic development is limited if specific local policies are not accompanied by macro policies to gain dynamic comparative advantages such as trade policies, co-ordination policies to capture positive externalities and reduce negative ones and investment into physical and social infrastructure.

The development of the informal sector is often limited by formal constraints. Informal activities rarely receive service (law protection), finance, or infrastructure (roads, energy, education formation) from government, because of budget constraints or because 'they do not pay tax'. Nevertheless, if tax holiday are often given to FDI and multinationals and infrastructural park area are built to induce foreign to invest[36], some incentives should be given, at least, initially to small

[33] Apprenticeship is an important alternative strategy for acquiring skills and thus may be fostered by giving at the end of the period a grant to the owner and to the apprentice.

[34] In Zimbabwe for instance, important network were created for the informal sector such as: Small Business Advisors (SBAs), Information flow, Credit availability, Informal sector Associations (ILO, 2000)

[35] Diversification of economic activities is key as well. Cotton cultivation in Africa is normally carried out by smallholders and this can have strong spill over effects for the whole economy. East African exporters of fresh fruit and vegetables can intercept the forthcoming changes in Chinese and Indian dietary habits, which are likely to converge with those of industrial nations. South Africa can be an important supplier in agribusiness, wine, the automotive industry, harbour wharfs, coal-to-liquid technologies, and chemicals (Goldstein et al., 2006).

[36] These can be a vehicle of transmission of technology upgrading only if absorbing capacities are already in the receiving country.

and micro-enterprises[37]. In this direction, there could be also an increase in the incentives for the informal sector to embrace some relevant formal rules through the admission to infrastructural facilities, to credit facilities and to social benefits (medium term policy of registration, protection and promotion see Mehrotra and Biggeri 2007). On the other side it is important, if possible, to embrace some informal sector rules as formal ones (this would give to informal activities rights and duties). Obviously, there are problems inherent to "informality" in SSA low-income economies as in most other countries including developed countries. From a productive point of view there is the lack of protection of workers rights -with their inability to meet the security requirements- and often an exploitative relations (e.g. dependent on the formal sector and global economy through sub-contracting relationships)[38].

[37] Although tax revenue could be seen as a medium to long-run policy agenda, in order to reduce budget burden provider based pre-payment schemes may be relevant for cost recovery.

[38] Though not explored herein, it is implicit that a co-ordinate answer for worker protection and social security from the civil society, international organisations (unions) and governments is also needed.

6. Conclusions: just a remake of an old movie?

Africa is nowadays fully regaining 'its position' in the globalisation production process, of both natural resources supplier, and consumer of final manufacturing products. This fact and its implications could be seen just as a remake of an old movie.
However, globalisation is bringing also new actors to the continent and opening up new markets and political relationships and new opportunities in terms at least of economic growth.
In this paper the main point is that African economic and human development cannot pass only through a rapid expansion of GDP. Economic growth is relevant since it is one of the prongs to increase human development. But this is obviously not sufficient, as widely recognised in today's international debate.
Therefore, in order to get the most in terms of human development from the resulting windfall gains, strong public policies are needed. The challenge is to ensure that a large proportion of the earnings from the minerals sector are invested in infrastructure and human capital development, to support medium- and long-term needs for diversification (ADB and OECD, 2007) to let job-creator sector to emerge. In this direction, policies and investment in basic social services and for the up-grading of the informal activities and the agricultural sector could work appropriately. Enhancing transparency and curbing corruption is another key element to realising this transformation and maintaining growth (ADB and OECD, 2007).
Two critical elements may be singled out underneath these policies (Bhaduri, 2003, Reinert, 2003). First, policy makers have to take into due account what the real economic issues and the structure and institutions of their countries are, and they also need to identify the nature of constraints and the dynamics of the processes that operate on the demand and the supply side of their economies. This is fundamental in order to regulate the process through which structural changes may bring to economic growth and human development. Second, economic development and human development can occur at the same time only if African countries are able to channel part of the natural resource profits in investment to increase productivity, and to devote part of the gains in productivity or extra-profits in an increase in real wages and social protection for workers and vulnerable people. This would turn economic growth into economic development and then into human development, as workers become part of a 'virtuous circle ' by positively influencing the domestic demand for products.

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Appendix: Data source and statistics and econometric results

Table A1 - Data source

Variables	Description	Source
GDP	GDP	WDI
KF	Gross Fixed Capital Formation	WDI
Trade	Trade (IMP+EXP)	IMF Economic Outlook
FDI	Foreign Direct Investment received	WDI
N	Production of Crude Oil, NGPL, and Other Liquids (thousand barrels per day)	International Energy Annual 2004- IEA
TL	Telephone mainlines (per 1,000 people)	WDI
LIT	Literacy rate, adult total (% of people aged 15 and above)	Human Development Report, UNDP
IMR	Infant Mortality Rate	Unicef
U5MR	Under Five Mortality Rate	Unicef
INFL	Inflation, consumer prices (annual %)	Penn's World tables
CONF	Conflicts (dummy 1 yes, 0 no)	Uppsala Conflict Database
FREED	Political Rights Index (from 1 to 7, 1 indicates the most free, 7 the least free)	Freedom House
DEBT	External debt, total	WDI
AID	Aid (Net)	DAC- OECD
POP	Population	WDI

Table A2 - Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
gdp_pc	344	1016.043	1391.442	82.21439	7396.851
kf_p	344	214.2556	316.2185	2.968223	1627.307
Trade_p	344	884.3773	1385.366	11.41032	7541.576
Fdid_p	344	2.87E+08	6.07E+08	-3.26E+08	7.10E+09
oilprod	344	191.4662	473.8343	0	2328.962
tel	344	29.99736	48.87854	0.1790418	286.6624
lit	344	60.02797	18.56652	14.3	93
infl	341	17.2176	55.39492	-9.9	550
conf	344	0.276163	0.44775	0	1
freed	344	4.677326	1.868242	1	7
Debtd_p	328	549.9116	543.0478	24.56705	3785.437
aidtpc	344	3.87E-05	4.11E-05	-5.01E-06	0.000319
gdp	344	1.35E+10	2.66E+10	1.86E+08	1.51E+11
gdpgrow	342	4.586314	8.858553	-31.3	106.2798
lpop	344	15.92616	1.35139	12.94283	18.67306
IMR	344	87.62084	38.24021	13	168,6
U5MR	344	139.723	69.02715	15	288.8

Table A3

MODEL [4]
DATA FROM 1997-2004

```
. xtreg lgdp_pc lkf_p oilprod tel lit lttrade_p lfdid_p infl conf freed ldebtd_p laidtpc, fe

Fixed-effects (within) regression               Number of obs      =       305
Group variable (i): panel                       Number of groups   =        41

R-sq:  within  = 0.5059                         Obs per group: min =         4
       between = 0.7836                                        avg =       7.4
       overall = 0.7674                                        max =         8

                                                F(11,253)          =     23.55
corr(u_i, Xb)  = 0.6998                         Prob > F           =    0.0000

------------------------------------------------------------------------------
     lgdp_pc |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       lkf_p |   .1437705   .0222761     6.45   0.000     .0999003    .1876406
     oilprod |   .0003596   .0000801     4.49   0.000     .0002019    .0005173
         tel |   .0026595   .0004538     5.86   0.000     .0017657    .0035533
         lit |  -.0024024   .0009301    -2.58   0.010    -.0042342   -.0005706
   lttrade_p |    .091731   .0214658     4.27   0.000     .0494567    .1340054
     lfdid_p |   .0045723   .0043126     1.06   0.290    -.0039208    .0130655
        infl |  -.0001664   .0001036    -1.61   0.109    -.0003703    .0000375
        conf |   .0222532   .0169055     1.32   0.189    -.0110402    .0555466
       freed |  -.0037743   .0060808    -0.62   0.535    -.0157497    .0082011
    ldebtd_p |  -.0309453   .0238189    -1.30   0.195    -.0778539    .0159633
     laidtpc |  -.0184646   .0104001    -1.78   0.077    -.0389463    .0020172
       _cons |   4.982954   .2768835    18.00   0.000     4.437664    5.528244
-------------+----------------------------------------------------------------
     sigma_u |  .70053877
     sigma_e |  .06465623
         rho |  .99155358   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(40, 253) =    81.34             Prob > F = 0.0000
```

Table A4

MODEL [4]
DATA FROM 2001-2004

```
. xtreg lgdp_pc lkf_p oilprod tel lit lttrade_p lfdid_p infl conf freed ldebtd_p laidtpc, fe
Fixed-effects (within) regression               Number of obs      =       158
Group variable (i): panel                       Number of groups   =        41

R-sq:  within  = 0.4573                         Obs per group: min =         2
       between = 0.7549                                        avg =       3.9
       overall = 0.7344                                        max =         4

                                                F(11,106)          =      8.12
corr(u_i, Xb)  = 0.5689                         Prob > F           =    0.0000

------------------------------------------------------------------------------
     lgdp_pc |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       lkf_p |   .1761572   .0369717     4.76   0.000     .1028572    .2494572
     oilprod |   .0004593   .0001021     4.50   0.000     .0002569    .0006618
         tel |   .0028728   .0014638     1.96   0.052    -.0000293    .0057749
         lit |  -.0035477   .0012088    -2.94   0.004    -.0059442   -.0011512
   lttrade_p |   .0505052   .0293903     1.72   0.089    -.0077639    .1087744
     lfdid_p |   .0071366   .0051106     1.40   0.166    -.0029956    .0172688
        infl |  -.0006619   .0001474    -4.49   0.000    -.0009541   -.0003697
        conf |   .0420839   .0203159     2.07   0.041     .0018057    .0823621
       freed |  -.0017938   .0103411    -0.17   0.863    -.0222959    .0187083
    ldebtd_p |   .1374412   .0677008     2.03   0.045     .0032177    .2716646
     laidtpc |  -.0302887   .0127817    -2.37   0.020    -.0556296   -.0049479
       _cons |   3.991319   .5344742     7.47   0.000     2.931672    5.050966
-------------+----------------------------------------------------------------
     sigma_u |  .65488885
     sigma_e |  .04997115
         rho |  .99421128   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(40, 106) =    71.59             Prob > F = 0.0000
```

Table A5

MODEL [5]
DATA FROM 1997-2004

```
. xtreg u5mr1 lgdp_pc gdp_pg lkf_p oilprod tel lit lttrade_p lfdid_p infl conf freed ldebtd_p laidtpc, fe

Fixed-effects (within) regression               Number of obs      =       305
Group variable (i): panel                       Number of groups   =        41

R-sq:  within  = 0.1957                         Obs per group: min =         4
       between = 0.4095                                        avg =       7.4
       overall = 0.3716                                        max =         8

                                                F(13,251)          =      4.70
corr(u_i, Xb)  = 0.4012                         Prob > F           =    0.0000

------------------------------------------------------------------------------
       u5mr1 |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
     lgdp_pc |  -4.188805   5.770996    -0.73   0.469    -15.55455    7.176941
      gdp_pg |  -.0232289   .0643811    -0.36   0.719    -.1500249     .103567
       lkf_p |  -.0199791   2.206546    -0.01   0.993    -4.365684    4.325726
     oilprod |   .0128173   .0076404     1.68   0.095    -.0022301    .0278647
         tel |  -.0446689   .0445476    -1.00   0.317    -.1324037    .0430659
         lit |  -.3384361   .0868696    -3.90   0.000    -.5095224   -.1673498
   lttrade_p |  -7.216265    2.07348    -3.48   0.001     -11.2999   -3.132627
     lfdid_p |  -.0273775   .3969432    -0.07   0.945    -.8091414    .7543865
        infl |  -.0095122   .0095649    -0.99   0.321    -.0283499    .0093255
        conf |   1.609029   1.562255     1.03   0.304     -1.46777    4.685828
       freed |  -.6141945    .559142    -1.10   0.273    -1.715402    .4870135
    ldebtd_p |   4.314213   2.193353     1.97   0.050    -.0055095    8.633935
     laidtpc |  -1.709313   .9617662    -1.78   0.077    -3.603473    .1848477
       _cons |   187.4307   38.37231     4.88   0.000      111.858    263.0034
-------------+----------------------------------------------------------------
     sigma_u |  57.919312
     sigma_e |  5.9339579
         rho |  .98961259   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(40, 251) =   310.20             Prob > F = 0.0000
```

Table A6

MODEL [6]
DATA FROM 1997-2004

```
. xtreg imr1   lgdp_pc gdp_pg lkf_p oilprod tel lit lttrade_p lfdid_p infl conf freed ldebtd_p laidtpc, fe

Fixed-effects (within) regression               Number of obs      =       305
Group variable (i): panel                       Number of groups   =        41

R-sq:  within  = 0.2020                         Obs per group: min =         4
       between = 0.3808                                        avg =       7.4
       overall = 0.3389                                        max =         8

                                                F(13,251)          =      4.89
corr(u_i, Xb)  = 0.3293                         Prob > F           =    0.0000

------------------------------------------------------------------------------
        imr1 |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
     lgdp_pc |  -2.026625   3.590173    -0.56   0.573    -9.097328    5.044078
      gdp_pg |  -.0095863   .0400519    -0.24   0.811    -.0884669    .0692943
       lkf_p |   -.182038   1.372706    -0.13   0.895    -2.885528    2.521453
     oilprod |   .0097054   .0047531     2.04   0.042     .0003443    .0190664
         tel |  -.0538008   .0277134    -1.94   0.053    -.1083812    .0007795
         lit |  -.1949835   .0540422    -3.61   0.000    -.3014174   -.0885496
   lttrade_p |  -4.261792   1.289925    -3.30   0.001    -6.802249   -1.721335
     lfdid_p |  -.0675493   .2469409    -0.27   0.785    -.5538896     .418791
        infl |  -.0061047   .0059504    -1.03   0.306    -.0178238    .0056143
        conf |   .8901063   .9718888     0.92   0.361     -1.02399    2.804203
       freed |  -.4351691   .3478458    -1.25   0.212    -1.120238    .2498994
    ldebtd_p |   3.099147   1.364499     2.27   0.024     .4118206    5.786474
     laidtpc |   -.946084   .5983209    -1.58   0.115    -2.124453    .2322852
       _cons |   111.6378   23.87166     4.68   0.000     64.62356    158.6521
-------------+----------------------------------------------------------------
     sigma_u |  31.754195
     sigma_e |   3.691553
         rho |  .98666522   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(40, 251) =   237.63             Prob > F = 0.0000
```