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# Oil boom, human capital and economic development: Some recent evidence

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## Franklin Obeng-Odoom

University of Technology, Sydney, Australia

Visiting Research Fellow United Nations Research Institute for Social Development (UNRISD),  
Geneva, Switzerland

### Abstract

This article highlights and assesses orthodox responses to three crucial questions in political economy, namely: the role of human capital in the process of economic development, how this role transforms during a period of resource abundance and what is the place of education in empowering labour to reclaim or transform surplus value. Drawing on recent evidence collected from Ghana, a new and young oil economy, it proposes different responses to all these questions which imply the need to replace the concept of ‘human capital’ with ‘human development’ and to move from theoretical to substantivist analysis of oil, education and labour relations.

**JEL Codes:** P 15, P36, Q15

### Keywords

Africa, decent work, education and training, Ghana, human capital, labour, oil

## Introduction

In his classic 1961 paper, ‘Investment in human capital’, economics Nobel Laureate Theodore Schultz noted that ‘[l]aborers ... become capitalists ... from the acquisition of knowledge and skill that have economic value’ (p. 3). Professor Schultz further noted that ‘this knowledge and skill are in great part the product of investment’ which ought to be encouraged and studied in economic analysis. Indeed, he argued that ‘To omit them ... is like trying to explain Soviet ideology without Marx’ (Schultz, 1961: 3). Economists since the days of Schultz and even before (Hodgson, 2014) have considered investment in

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### Corresponding author:

Franklin Obeng-Odoom, School of Built Environment, University of Technology, Sydney, Peter Johnson Building, DAB, Level 5, Sydney, NSW 2007, Australia.

Email: Franklin.Obeng-Odoom@uts.edu.au

human capital to be crucial to employment and returns. Thus, when Icelandic economist Thorvaldur Gylfason (2001) showed that an oil boom has deleterious effects on human capital, exponents of mainstream economics seemed to have concluded that the last hope for the poorer countries, rich mainly in resources and encouraged over the years to invest in human capital, had lost the last plot in their quest for economic development. This is particularly so because there has been a long tradition in neoclassical economics that the abundance of and dependence on natural resources is a curse, especially for African countries (Auty, 1993; Carmody, 2011; Karl, 1997). To resolve this confused situation, private or public–private partnerships have been recommended as a way of using the market to save the ‘third world’ (Stevenson, 2014).

These arguments require re-evaluation in the light of recent contrarian evidence (a) personally collected in the form of interviews and publicly sourced and systematised from (b) recently published data (e.g. Darkwah, 2013; Obeng-Odoom, 2014; Panford, 2014) and (c) media-released information from Ghana. The use of media evidence is often looked upon disapprovingly in economic analysis. However, in the case of Ghana where the media have been instrumental in shaping and reshaping discourses about labour, media accounts have become an important source of evidence, especially when used alongside other data (Bob-Milliar and Obeng-Odoom, 2011). This is particularly important in the context of oil where the media and civil society have been very active, among others, in establishing *Ghana Oil and Gas Online*<sup>1</sup> where various media articles on oil and gas are posted (see also, Behrman et al., 2012). The focus on Ghana is important, not only because it is one of Africa’s latest entrants into the global league of oil producers – a club in which the record of African countries has been considered a pariah (Carmody, 2011) – but also because the maiden issue of the *Ghanaian Journal of Economics* has specifically called for more studies on education and human capital formation (Alagidede et al., 2013). Besides, while the claim made by Schultz (1961) that labour can become capitalists through education may sound extreme, economists, both academic and professional, place major emphasis on human capital formation and how it tends to be destroyed by resource abundance (see, for example, Gylfason, 2001; Wadho, 2014). These issues remain important to political economists who eschew methodological individualism and embrace methodological holism. Yet, while studies on oil in Ghana have proliferated (see, for example, Ackah-Baidoo, 2013; Ayelazuno, 2014; Bawole, 2013; Gyampo, 2011; Gyimah-Boadi and Prempeh, 2012), those on human capital formation have been few (e.g. Darkwah, 2013; Panford, 2014) and not yet framed in political economic terms – an approach which, as I will advance, builds on but transcends the few relevant studies.

Based on the evidence, Ghana’s experiences with oil seem to contradict all aspects of the mainstream account of oil boom, human capital, and economic development in the sense that (a) both the demand for and supply of education have dramatically increased during the oil boom, (b) investment in ‘oil education’ has not been accompanied by the expected ‘returns on education’ in the sense of establishing congruence between jobs expected and jobs obtained and (c) much of the relatively little employment generated is gendered and endangered work, with annualised wages that are different and differentiated between local and imported labour, creating a labour aristocracy in the workforce. Ghana’s experience confounds the mainstream ideas about labour, although it is still

early days yet and more time and study are needed to reflect on whether these experiences are temporary and only visible because Ghana's experiences with oil export are only 5 years old. In spite of being tentative, this article makes a contribution to a young but growing literature in heterodox political economy on education, labour and returns (see, for example, Dunn, 2014) by attempting an explanation for the enthusiasm about the supply of and demand for education in Ghana's oil days and suggesting possible ways of addressing the tensions and contradictions that labour faces in that country. The rest of this article is divided into three parts: theory, Ghana's experiences (with education supply, demand, and returns on employment) and praxis.

## Human capital theory, oil and economic development

Many social scientists and other scholars place considerable importance on education. For example, geographers have had a keen interest in the relationships among learning, innovation and regional economic development, as exemplified in special journal issues with titles such as 'From Earning Region to Learning in a Socio-Spatial Context' (Rutten and Boekema, 2012) and 'Regions as Knowledge and Innovative Hubs' (De Propriis and Hamdouch, 2013).

Human capital theory in mainstream economics is, however, different. It arose as part of the argument that capital formation is crucial in the process of economic development. Yet, human capital received emphasis only after years of interpreting capital as *physical* (not human) capital formation. For the poorer countries, the announcement that economists were introducing a new understanding of capital formation as the driver of economic development came in a conference in Addis Ababa in Ethiopia where H.W. Singer noted that 'The fundamental problem is no longer considered to be the creation of wealth, but rather the *capacity* to create wealth' (cited in Arndt, 1989: 60, emphasis in original). Principally espoused by mainstream economists, the concept of human capital was given prominence in economic analysis through the work of Schultz (1961) and Becker (1962) which, together with that of others, has been synthesised by latter day economists and taught in the major textbooks on economic development such as *Economic Development* (Todaro and Smith, 2006).

Briefly, the human capital theory of education holds that the value of education is mainly utilitarian and, on its own, brings about major overall returns to the recipients (private benefit) and major returns to the public (social benefit), although it is also accepted that education comes with cost both direct and indirect (opportunity cost). Investing in education leads to higher rates of productivity, better prospects of employment and higher earnings. Human capital is broader than education: Becker's (1962) classic study identified school, on-the-job training, medical care and the acquisition of information as primary examples of investment in 'human capital', to which the returns are rewarding employment. However, the relevant aspect of the theory for this article is education which is said to enhance labour and labour power.

Aside from productivity improvement, employment and economic returns, human capital is also seen as encouraging the quicker embrace of information and communication technology (ICT) and other technology, as well as new ideas for social improvement, better health and entrepreneurship (Bartel et al., 2014; Murphy and Siedschlag, 2013). Harvard economist Edward Glaeser is one of the most enthusiastic writers on the contribution of

human capital to entrepreneurship, ideas, variety and hence increase in the demand for labour and the growth of cities. For Glaeser, it seems ‘educated cities’ have low levels of unemployment: indeed, education is said to be a predictor and generator of employment, both through entrepreneurship and through firms’ demand for labour (Glaeser, 2011; Glaeser et al., 2014). In this sense, investing in human capital is seen as one important way out of poverty and the path to development. Providing training will propel labour into the class of the affluent. To *The Economist* (2014) magazine, education that is practical, that supports the *status quo* and that can be used directly by capitalist firms is the most desirable, while the arts and humanities, especially obtained from obscure schools, are regarded as liabilities. The general case for internships, degrees from prestigious universities and rankings-based education can all be put in this category. Similarly, anything that detracts from human capital formation is considered undesirable.

Thus, the work of the Icelandic economist, Thorvaldur Gylfason (2001) was something of a watershed in mainstream economics, in that he argued that abundance of oil in an economy crowds out the education sector. According to Gylfason (2001), public expenditure on education, years of schooling and gross secondary school enrolment usually decline with mineral booms. He supported his view that ‘natural capital’ displaces ‘human capital’ with evidence that when countries experience booms, they tend to place a lower premium on education. Even when publicly funded, Gylfason argued, the quality of education may be poor as it is not necessarily demand driven. So, inputs, outputs and participation in education all suffer after a boom in minerals:

Natural resources bring risks. One is that too many people become locked in low-skill intensive natural-resource-based industries, including agriculture, and thus fail through no fault of their own to advance their own or their children’s education and earning power. Another risk is that the authorities and other inhabitants of resource-rich countries become overconfident and therefore tend to underrate or overlook the need for good economic policies as well as for good education. In other words, nations that believe that natural capital is their most important asset may develop a false sense of security and become negligent about the accumulation of human capital. Indeed, resource-rich nations can live well off their natural resources over extended periods, even with poor economic policies and a weak commitment to education. Awash in easy cash, they may find that education does not pay. Nations without natural resources have a smaller margin for error, and are less likely to make this mistake. (Gylfason, 2001: 858)

Many other economists have subsequently endorsed this theory or been influenced by the study.<sup>2</sup> The Pakistani economist Wagha Ahmed Wadho (2014), based at the Lahore School of Economics, has demonstrated additional mechanisms – such as corruption and rent seeking – and confirmed the central thesis: an oil boom is usually deleterious to human capital formation. Non-economist Bell (2014) has argued in the *Australian Universities’ Review* that a minerals industry boom draws students away from universities, demonstrating how universities struggle to attract regional students who prefer to seek well-paid jobs for which no tertiary-level education is required. Similarly, Measham and Fleming (2014) argue that coal seam gas areas in Australia have witnessed a fall in the number of people with university degrees and an increase in those with vocational certificates between 2001 and 2011.

In North America, Schafft et al. (2014) also link boom and doom in human capital creation, in a paper drawing on the perspectives of school education leaders in Pennsylvania to

identify the ramifications of the oil and gas industry for local educational investment and enrolments, and hence, future economic development. While a boom puts pressure on education facilities, they question whether it provides incentive for investment in expansion of educational facilities: 'These are questions that bear further research, in particular in terms of the ways in which new forms of inequality, insecurity, and social exclusion may accompany rapid economic expansion' (Schafft et al., 2014: 401).

This crisis view of natural resources has had a long history in economics. Popularly known as the 'Dutch disease', the founding principles of the *methodology* which first led to the view are ascribed to John Cairnes, the Australian economist who, in 1857, studied the impact of that country's 1851 gold rush on other sectors of the economy (Bordo, 1975; World Bank, 1988: 21). Later, this paradox of abundance was framed around the so-called Gregory Thesis (Murray, 1981) after R.G. Gregory (1976) who showed how a natural resources boom might lead to de-industrialisation in Australia. The concept was recalibrated as the 'Dutch Disease' by *The Economist* magazine, in an account of de-industrialisation experienced in the Netherlands and attributed to dependence on North Sea oil and gas (*The Economist*, 1977).

The work of Max Corden and Peter Neary (1982) deserves lengthy consideration because of its fuller explanation of the 'Dutch disease'. According to these writers, in a resource-rich economy, capital and labour tend to move away from the manufacturing sector to the booming sector, and this movement can, in turn, cripple all other sectors – a process they called 'resource movement effect'. A 'spending effect' sets in when, with the demise or contraction of sectors other than the booming one, prices of goods and services in these non-booming sector rise as demand outstrips a declining supply. A spending effect can also set in when the sudden inflow of resources increases the purchasing power of some locals who, in turn, demand more of certain services – a process that tends to push up the prices of such services. Either way, relative prices of goods and services increase in the booming economy. This, in turn, increases the *relative exchange rate*. While this process will not automatically affect the *nominal exchange rate*, it usually does so. The new spending processes lead to the purchase of more local currency, either because foreigners are buying more local currency in order to buy the country's natural resources, or because foreigners are paying the country international currency which is then used to buy local currency. As more local currency is bought, the price or exchange rate of that currency appreciates. A strong currency is good, but not so good for manufactures that are exported because they become uncompetitively expensive in global markets. Similarly, as the country's currency strengthens, it becomes cheaper for people to import more goods, and that too can adversely affect manufacturing as fewer local manufactures are bought (Barder, 2006; Corden and Neary, 1982).

Most economists who study Africa and other resource rich but materially poor regions have applied this 'problem-based' view of natural resources (see, for example, Collier, 2009; Sachs and Warner, 1995; Sala-i-Martin and Subramanian, 2012).

In summary, we would have to expect that more education would turn labour into capitalists or substantially enhance the conditions of workers. Oil production disrupts this trend by reducing the supply of and demand for education. From this perspective, we should expect Africa's young oil producer, Ghana, to have significant problems with human capital formation.

## The Ghana paradox

Yet, since the discovery of oil in commercial quantities in 2007 and the commencement of oil export in 2010, investment in oil-related education in Ghana has increased in a number of ways (Darkwah, 2013; Obeng-Odoom, 2014; Oteng-Adjei, 2011; Panford, 2014). Examples are the establishment of new subjects in tertiary institutions, introduction of new programmes on oil and gas, provision of new technical educational institutions to offer certificate courses on oil and gas, oil companies' supported expansion of research programmes and laboratories on oil and gas, and state support/sponsorship of many national officers to study oil and gas either in the country or overseas. Moreover, the state has obtained a USD38 million-dollar loan facility to build capacity, including 'the development of indigenous technical and professional skills needed by the petroleum sector through support to selected educational institutions' (Oteng-Adjei, 2011: 2). Furthermore, Ghana National Petroleum Corporation is sponsoring some of its staff to undertake oil and gas educational programmes. Civil society groups have also organised many oil and gas seminars and conferences for think tanks and the general public.

These levels of support in the education sector draw on public, private and public-private initiatives. Take the oil courses on offer at the Takoradi Polytechnic, for example. Supported by both the government and the private sector, they provide education in oil extraction. The polytechnic is offering the National Vocational Qualification in oil to a 6-month diploma course valued at USD7500 per student from which 32 people have graduated. Tullow Oil, a major oil company in the country, invested USD5 million in setting up the course and its facilities, and eight of the graduates were directly sponsored by Modec, a company involved in the oil industry in Ghana.<sup>3</sup> The Kwame Nkrumah University of Science and Technology, also a public tertiary institution, is to graduate 1270 degree-level and postgraduate students from oil and gas courses in the next 5 years, while the University of Ghana has advertised for law qualifications in oil and gas and the University of Cape Coast is advertising places for Master of Business Administration in oil and gas. Owing to the actual and expected rush for such courses, other universities such as the University of Mines and Technology have invested in staff development by sending academics overseas to train in oil and gas (Panford, 2014). There are many non-tertiary training institutions, vocational institutes and learning centres springing up in the country to supply 'human capital' to support this young industry (Darkwah, 2013; Obeng-Odoom, 2014; Panford, 2014).

These developments have not reduced the share of government expenditure going to general education in Ghana. Generally, public expenditure on education was 9.1% of gross domestic product (GDP) in 2007 when oil was discovered and increased to 10.1% a year later (Ministry of Education, Ghana, 2010). According to the 2013 expenditure figures released by the Ministry of Finance and Economic Planning, public funding to the Ministry of Education was 23.8% of the total budget (computed from Ministry of Finance and Economic Planning, 2013 – 6 years after oil discovery and 3 years after successful export of oil began. Between 2013 and 2014, there was a 62.5% increase in the public funds allocated to education (Ministry of Finance, 2013b). Table 3 contains data on the trends in the supply of schools published in *The State of the Ghanaian Economy* (Institute of Statistical, Social and Economic Research (ISSER), 2012). These provide further evidence of positive investment in education.

**Table 1.** Trends in the supply of schools, Ghana 2007–2011.

Level	Provider	2007/2008	2008/2009	2009/2010	2010/2011	% Change, 2007–2011
Crèche/nursery	Public	657	770	796	666	1.37
	Private	2947	3385	3739	4303	46.01
Sub-total		<b>3604</b>	<b>4155</b>	<b>4535</b>	<b>4969</b>	<b>37.87</b>
Kindergarten	Public	11,140	11,827	12,481	13,263	19.06
	Private	4309	4612	4990	5538	28.52
Sub-total		<b>15,449</b>	<b>16,439</b>	<b>17,471</b>	<b>18,801</b>	<b>21.70</b>
Primary	Public	13,247	13,510	13,835	14,431	8.94
	Private	4068	4371	4744	5292	30.09
Sub-total		<b>17,315</b>	<b>17,881</b>	<b>18,579</b>	<b>19,723</b>	<b>13.91</b>
Junior high school	Public	7423	7656	7969	8462	14.00
	Private	2319	2557	2799	3247	40.02
Sub-total		<b>9742</b>	<b>10,213</b>	<b>10,768</b>	<b>11,709</b>	<b>20.19</b>
Senior high school	Public	493	493	496	511	3.65
	Private	207	177	201	209	0.97
Sub-total		<b>700</b>	<b>670</b>	<b>697</b>	<b>720</b>	<b>2.86</b>

Source: Calculated from ISSER (2012).

Table 1 shows that, across all levels – crèche/nursery, kindergarten, primary, junior high school (JHS) and senior high school (SHS) – there has been an overall substantial increase in the supply of education. Both the public and the private sectors have consistently increased the supply of schools since the discovery of oil in 2007. Datasets with the same level of detail for tertiary education are hard to come by. However, there is evidence that there was a 19.7% increase in the number of tertiary students enrolled in Distance Education Programme between 2010/2011 and 2011/2012 (Ministry of Finance and Economic Planning, 2012). Tertiary education has percolated only 9.7% of the population but, aside the 55 accredited private tertiary institutions, the supply of public education has increased over the years. As of 2010, there were 7 public universities and 3 institutions considered specialist and tertiary, 10 polytechnics, and 38 education training colleges all of which are public (Alagidede et al., 2013).

There has also been investment in the quality of the education supplied. The Ghanaian state seems to have made some interventions along the lines of infrastructural enhancement of 10 technical institutes, 2 polytechnics and the College of Technology, while some 200 teachers in technical institutes were supported to have continued professional development in 2013 (Ministry of Finance and Economic Planning, 2013a). In 2012, 8409 pupil teachers were sponsored to receive upgraded teacher training skill in the Untrained Teachers Diploma in Basic Education (Ministry of Finance and Economic Planning, 2012). Furthermore, in 2013/2014, the national state through the Ministry of Education and Ghana Education Service organised in-service training, skills improvement and educational training for 3086 kindergarten teachers, 13,264 teachers in the primary school and 6534 teachers at JHSs (Ministry of Finance, 2013b). So, both qualitatively and quantitatively, investment in oil has not impaired the quality and standards of education. So,



**Table 2.** Trends in the number of people enrolling in education at different levels, Ghana 2011–2013.

Level	2011/2012	2012/2013
Kindergarten	1,400,000	1,600,000
Primary	3,900,000	4,100,000
Junior high school	1,300,000	1,400,000
Senior high school	770,925	786,344*
Technical and vocational education training	32,833	33,490*

\*Projected 2014 figures.

Source: Ministry of Finance and Economic Planning (2013b).

**Table 3.** Gross enrolment ratio in Ghana, 2010–2011.

Level	2010/2011	2011/2012
	<i>Per cent</i>	
Kindergarten	98.4	99.4
Primary	96.4	96.5
Junior high school	79.6	80.6
Senior high school	36.5	36.9

Source: Ministry of Finance and Economic Planning (2012).

from the supply side, Ghana has not followed the path predicted by economic theory. On the demand side too, the number of students enrolling in education is on the rise, as shown in Table 2. Similarly, the ratio of the population enrolling at all pre-tertiary levels is on the rise (Table 3).

It is often the case that there is a huge gap between enrolment and completion in Africa and hence the gross enrolment ratio (GER) is said to be a poor measure of education demand. However, in the case of Ghana, the net enrolment ratio (NER), while not as high as the GER, is also on the rise. In 2012/2013, for instance, NER for primary and JHS were 84.1% and 47.8%, respectively (Ministry of Finance and Economic Planning, 2013a).

These gains have translated into economic growth. In 2011, the growth rate in the education subsector was 3.8% but it increased to 6.7% in 2012. In 2013, the targeted growth rate (4.0%) was exceeded (4.6%; Ministry of Finance and Economic Planning, 2013a). So, the investment in education has been worthwhile, in growth terms at least.

How might we make sense of these differences in the economic explanation and the experiences of Ghana? One way is to use the concept of frames. The conceptual metaphor of a frame draws attention to how a phenomenon is seen and in what way it is appreciated (Bohman, 2010). In Ghana, oil and gas education is framed as a pre-requisite for success in the industry. Furthermore, the current level of capacity in the field has been framed to be inadequate and depleting. It has been widely reported that about half of the professional workers in the oil and gas industry will retire by 2017 (Idrisu, 2014), exactly in 2 years' time: so there will be a massive demand for oil workers. As noted by Darkwah



(2013), teachers of oil courses also make promises of beckoning opportunity in the industry.

What these examples show is that the mineral boom-education nexus is contingent, not categorical. It is not only a case of different institutions and contexts, but also *framing* that can make the difference. Where opportunities and risks in oil are framed as contingent on attaining certain educational skills and experiences, the educational institutions, the oil companies and the government fan this perception by investing in the sector and the media produce images of opportunities linked with education, people perceive opportunity as linked to attaining educational ends and hence are likely to embrace education (Obeng-Odoom, 2014). Whether doing so results in sustainable jobs, however, warrants more careful analysis.

## Education, employment, returns

One way to take stock of education, employment and returns is to examine the backward, forward and combined linkages in the oil and gas industry, as done by Albert Hirschman (1958, 1984) and Harold Innis (Watkins, 1963). From this perspective, jobs related to backward linkages are those that are generated from input industry and those that are generated from forward linkages arise from the processing of oil, while combined linkages connect or arise from both.

These jobs may be located in three different, but related, areas in the oil industry: upstream, midstream and downstream. Upstream, on-rig jobs have been reported in Ablo's (2012) survey, but they are much fewer than promised. Besides, they are highly gendered in the sense that the high paying ones have gone to men, while women have taken cleaning and cooking jobs which are low-paying. Career advancement has also been reported to be much more oblique than expected. In spite of these pressures, Darkwah (2013) has shown that more and more people are being trained for such jobs with the effect that 'a reserve army of labour' exists to hold down wages on the rig. Midstream transport or support services jobs have also started springing up to provide rig-related equipment, but these are few at this stage, while downstream, oil-product-related jobs are yet to pick up – mainly due to the lack of a petrochemical industry in the country (Obeng-Odoom, 2014). Construction jobs are on the rise, but they have accrued to males for the most part with low-paid positions going to women who struggle to work in the sector (Owusuaa, 2012).

The processes of obtaining and maintaining jobs in upstream and midstream sectors have been characterised by widespread discrimination. Recruitment firms have been openly 'tribalistic' in the sense of hiring people from preferred tribes or, more precisely, ethnic groups. This ethnic-based recruitment process has become institutionalised and entrenched in an environment where oil companies retain only particular companies to handle their recruitments (Ablo, 2012). After employment, discrimination persists but changes location from among local labour force to between local and expatriate labour force. Schlumberger, a global oil and gas project management service company with subsidiaries in Sekondi-Takoradi, for instance, is reported to be paying expatriate staff rental allowances which are over 106 times higher than that of the local workers on grade 10 of the pay scale (myjoyonline.com, 2014), resulting in stratification in the class of oil

**Table 4.** Earnings (USD) in the oil and gas industry, Ghana 2010–2011.

Type of salary	2010	2011	2012	2013
Local average	N/A	N/A	40,200	40,500
Average for imported labour	N/A	N/A	139,900	121,600

Source: Hays Recruiting Experts in Oil and Gas (2010, 2011, 2012, 2013).

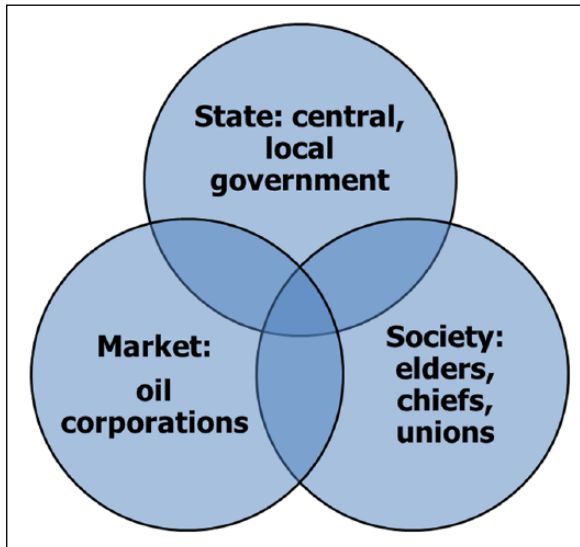
workers. Table 4 shows that this practice is widespread even if the magnitude is averagely much lower in the rest of Ghana.

Table 4 shows that, on average, imported labour is paid at a rate that is about three times higher than local labour for the same jobs. Attempts to contest such practices have led to growing reports of discrimination and exploitation of oil workers in Ghana, resulting in protest which, in turn, has led to witch-hunting, scapegoating and victimisation of oil workers, especially those prone to unionisation, by some oil companies (*Daily Guide*, 2014). More fundamentally, there is a huge mismatch between where the jobs are created and areas with the most need for jobs. In turn, oil-related jobs go to people who live outside or are from outside the oil region – where most people have been displaced as fishers, fishmongers and farmers (Obeng-Odoom, 2014).

## Praxis

These job experiences in Ghana challenge uncritical views about human capital, employment and returns. They also cast doubt on the optimistic view that labour can somehow become capitalists with more education. Clearly, education alone cannot drive the process of development. Indeed, the *utilitarian* theory of human capital-induced economic development is highly problematic. As noted by social reformer Henry George ([1879] 2006), one highly educated person among a society of illiterate people can increase her wage because of education, but as the general level of education rises to that person's level, the special advantages accruing to her must pale. George argued that the wages of educated labour tends to decline as a proportion of the surplus produced in society, as increasing rent extracted from land and minerals leak into the coffers of landlords, leaving only proportionately small amount for labour. From a Marxist perspective, surplus value is created.

Education, then, must be broadly understood not as 'capital' but as empowerment. In turn, the content of education must be empowering, socially, economically, culturally, materially, even spiritually. For Brazilian political economist Paulo Freire (1970), and his idea of a *Pedagogy of the Oppressed*, education must make central a critical understanding of how capitalism seeks to subordinate labour and dissipate land and natural resources. It must utilise local experiences of labour to conscientise and to empower. As a Marxist-based approach that emphasises problem and praxis-based education, the ideas of *historical process* and *transition* are crucial, as is the philosophy of capitalism as a world and integrated system. So, 'oil experiences' can only be part of a broader process of global fossil capitalism and though worker experiences will differ and indeed are different and differentiated across space and time, they are also connected to a global struggle for all workers.

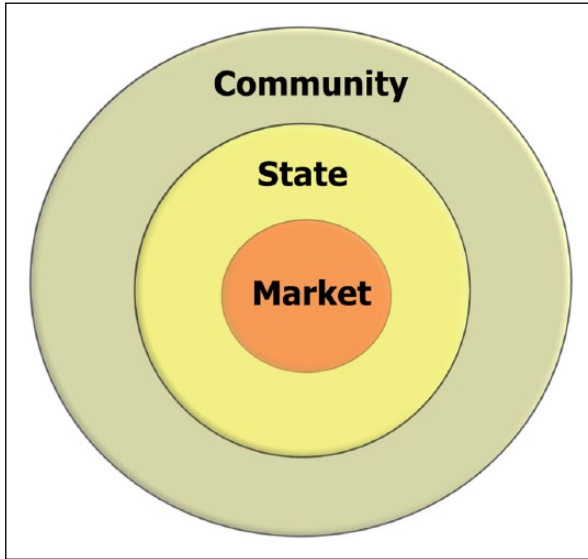


**Figure 1.** Neoliberal good governance.

There has been a turn to governance as a panacea in the mainstream literature, paralleling the rise of new institutional economics but extending to contemporary neoliberal policies. From this perspective, ‘good governance’ should emphasise only inputs, as Francis Fukuyama (2013) has recently argued. This approach is seductive with its call for a win–win ‘all hands on deck’ *process* which invariably means working in a process in which those with market power ultimately dominate. It is framed around the issue of equality of access that ignores equality of outcome. As indicated diagrammatically in Figure 1, it purports to be all inclusive in the process of governance without dealing with starting levels of inequalities, so it may be called an ‘all inclusive market-led’ approach to governance (Figure 1).

It is an approach whose introduction in Africa was highly influenced by the World Bank and is much beloved by it and other world development institutions (Obeng-Odoom, 2013). The good governance approach has a beguiling vision but it reduces institutionalism to markets, market-determined or dominated processes. It contends that society, market and state must work together, drawing in, respectively, elders, chiefs and unions, oil corporations and government, state and local government agencies. All these actors are principally required to work with a market vision and mission. The destructive effects of this approach have been well documented (Carmody, 2011; Obeng-Odoom, 2014; Stevenson, 2014).

An alternative in praxis exists not in terms of comprehensive content but in terms of *principles*. Such principles must be incubated within a community-embedded state and market regulatory regime. Applied to the Ghanaian situation, this alternative will entail a socially contained oil sector subordinated to community needs mediated by the state. Here, the vision of ‘human development’ rather than ‘human capital’ can be developed. The main concern here is not to train labour to work but to empower labour to live a fulfilling life, to stake a bigger claim of the surplus value.



**Figure 2.** Community-embedded state and market regulations.

Figure 2 shows that all three institutions will work together, but they will play different roles. A human, community-centred system will set the vision; the apparatus of the state will be used in the process to achieve the vision, and the market made up of oil companies will be working within a space that has the coverage of the state and importantly the society. In this vision, markets are important but they are subordinated to community and the state. Far from being just an abstract approach, it entails tighter community involvement and hence participation in the setting, implementation and monitoring of standards, provision of education and distribution of jobs. It is an integral and integrated system of workers all the way down.

The approach can be called ‘indigenisation’ because it has to rely on indigenous structures and reality. Indigenisation is about public education that promotes greater and better indigenous vision, mission, resources and rewards. Public education will then offer a system that uses indigenous resources at all levels and hence for all linkages to occur again at all levels in the oil but also outside of the oil industry.

Such an approach is not analogous to the current policies of education or employment in the oil industry because they promote private-sector-led education policy which offers education to those who can pay. As Table 3 shows, the current programme is a private sector-led education programme: between 2007 and 2011, public education has grown only by 1.37%, 19.07%, 8.94%, 14% and 3.65%, respectively, for crèche, kindergarten, primary, junior high and senior high schools. For these same levels, private-sector-provided education has grown by 46%, 28.52%, 30.09%, 40.02% and 0.97% – in that order. From senior high school onwards, the state dominates in the supply of schools (Alagidede et al., 2013), but that can only benefit those who have the resources to make it through the lower levels of education. Building more public schools at all levels can generate backward, forward and combined linkages for job creation too. Under an indigenisation

policy, the public sector can use oil rents to supply freer education at all levels. This can better bring about the redistribution of resources, especially when an 'affirmative stance' is adopted to cater to the unique needs of the oil region, where educational levels are in need of substantial improvement (United National Development Programme (UNDP), 2013).

Under an indigenisation philosophy, this education, itself, must be run according to indigenisation policies. These must go beyond the current local participation law: it is not simply about participation but about taking over the 'commanding heights' of the oil and gas industry by locals from the community and collectively setting employment 'enterprise agreements'. Research in South Africa (Cooper, 2007), another African country, suggests that where there are structures in place and a history of activism, such grassroots strategies as indigenisation can be expected to thrive.

In this sense, the prospects of success in Ghana are bright. There is infrastructure for worker education at the Sekondi-Takoradi Workers' College and indeed workers' colleges exist in many other regions (e.g. Cape Coast Workers' College) to empower workers in different regional work dynamics. While some of these have been turned into private secondary schools, they can be returned to their original purposes as they remain in the hands of the public. Unionists at the Trades Union Congress and workers at the Rig Workers' Union and the famous Railway Workers' Union are all around and can be reinvigorated. There are local champions such as Nana Kwabena Nketsia V, chief of Esikado, a suburb of the oil-rich Western Region, 'a man who has come to national attention by the wisdom of his thoughts and the power of articulation of traditional truths' (Ashon, 2012: 6) who can help drive the strategy. Indigenisation policy will not only be about oil or education, but it will also have to be linked to workers' activism elsewhere: in construction, in public transport and public housing. Here too, there are institutions in place to champion the alternative, notably the Railway Workers' Union which, while relatively dormant, is not extinct.

## Conclusion

This article has problematised the orthodox economics assumptions and claims about three crucial questions in political economy, namely: What is the role of human capital in the process of economic development? How is this role transformed during a period of resource abundance? And what is the place of education in empowering labour to reclaim or transform surplus value? Drawing on recent evidence collected from Ghana, it has demonstrated that an oil boom does not necessarily lead to education doom. Both demand for and supply of education have increased substantially in Ghana since it became an oil economy. This deviation from theory can be explained by the idea of 'frames', that is, where employment opportunities in the oil and gas industry are *framed* as dependent on obtaining scarce education in oil and gas, the level of interest in and support for education by the public, private and civil society sectors tend to be high, as is the resulting demand for educational services. Importantly, none of these increases has been at the expense of general education. Rather, the demand for and supply of general education too have increased. There is also some indication that the government is making a degree of investment in quality education.

In spite of increased levels of education, however, the ensuing employment levels and returns on employment have been substantially lower than expected and different from

what has been predicted by orthodox theory. Far from workers automatically taking leading roles in the oil industry, the story is more nuanced. Some workers have benefited, but they have done so substantially less than foreign workers. Many local workers have missed out, and jobs have gone to areas that have not lost too many workers to the oil industry. Women have remained at the margins of oil work. The concept of human capital in a minerals society embodies many socio-economic contradictions: it turns a blind eye to exploitation of workers.

These diverse impacts suggest the need to replace the concept of 'human capital' with 'human development' and to depart from theoretical to substantivist analysis of economic, employment and labour relations, drawing on Polanyi's (1957) idea of the 'economy as an instituted process'. Policy wise, these alternative arguments do not lead to comprehensive analysis of content. Instead, they imply key principles of action, of praxis: that education must receive more public support at all levels and be organised around a set of indigenisation principles. While the details of this orientation require *additional* analysis, there are many local institutions in place to make this indigenisation policy possible, as well as desirable.

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### Notes

1. <http://ghanaoilonline.org/>
2. The study has over 1000 citations in Google Scholar (see [http://scholar.google.com.au/scholar?hl=en&q=Natural+resources%2C+education%2C+and+economic+development&btnG=&as\\_sdt=1%2C5&as\\_sdtp=](http://scholar.google.com.au/scholar?hl=en&q=Natural+resources%2C+education%2C+and+economic+development&btnG=&as_sdt=1%2C5&as_sdtp=)).
3. Thanks to a lecturer on the programme who offered this information.

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## Author biography

Franklin Obeng-Odoom is a Senior Lecturer in Property Economics at the School of Built Environment and a member of the Asia Pacific Centre for Complex Real Property Rights at the University of Technology, Sydney. His research interests are centred on the political economy of development, cities and natural resources (specifically water, oil and land). His current research is in agrarian political economy, looking at inherited, imposed and directed transformations in land and property rights. This research has additional implications relating to food sovereignty and economic development, and his work has contributed to UN support for land taxation in Africa. Franklin is the editor of *African Review of Economics and Finance* and is on the editorial boards of *Urban Challenge (Urbani Izziv)* and *SAGE Open*. He has published in a number of academic journals, including *Review of African Political Economy* and *The Review of Black Political Economy*, and is the author of two books published by Routledge.