Binzagr Institute
for Sustainable Prosperity

FULL EMPLOYMENT AND SOCIAL JUSTICE

Solidarity and Sustainability

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"Sustainable prosperity" is a holistic notion encompassing the physical, mental, environmental, financial, educational, and civic wellbeing of all individuals, families, neighborhoods, and regions throughout the world. In this sense, sustainable prosperity requires the development of a multifaceted public policy framework addressing the root causes of global, national, and regional socioeconomic challenges. It must guarantee all individuals a decent quality of life with dignity and the opportunity to be a member of an inclusive, participatory, and just society. Sustainable prosperity means that every decision we make, individually or collectively, must take into account its direct and indirect effects on people, on the planet, and on the economy.

Crafting solutions to the complex challenges that confront us in the twenty-first century requires an interdisciplinary approach at the intersection of economics, ecology, and ethics. The Binzagr Institute for Sustainable Prosperity book series seeks proposals from a broad range of fields that encompass and further this philosophy. We welcome authored works or edited manuscripts that investigate socioeconomic inequality based on class, race, ethnicity, and/or gender, and that promote policies to further sustainable prosperity among marginalized groups. We especially encourage proposals that build on the Job Guarantee approach to full employment, financial sovereignty (functional finance), renewable energy, sustainable agriculture, environmental policies, local community development, local capacity building, social ecology, social venture partnerships, and social entrepreneurship.

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CHAPTER 1

Introduction

Michael J. Murray and Mathew Forstater

1.1 Introduction

How can full employment programs sustain the economy, the environment, promote social justice, and reinvigorate local communities? Concisely, that is what this book attempts to answer. The forthcoming chapters build on three previous volumes by the editors; the essays in Murray and Forstater (2017) investigate the financing of the Job Guarantee through the lens of Modern Money Theory; contributors in Murray and Forstater (2013a) simulate Job Guarantee programs; and the essays in Murray and Forstater (2013b) investigate real world case-studies of employment guarantee schemes. The contributions in this volume focus on the formation of federal, state, and local institutions to reduce and eliminate the opportunity gap for women and minorities, promote environmentally sustainable methods of production and consumption, and rebuild local economies through education, training, and community redevelopment programs. The shared

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vision among the contributors of this volume is that the formation and implementation of a federally funded, locally operated, Job Guarantee program is a vital component to address these complex and interweaving concerns. The theoretical foundations of the Job Guarantee (also referred to in the literature as the Employer of Last Resort (ELR) program or the Public Sector Employment (PSE) program) was furthered in the late 1990s and early 2000s by economists in the USA, Europe, and Australia notably at the *Center for Full Employment and Price Stability* (http://www.cfeps.org), the *Levy Economics Institute* (http://www.levyinstitute.org), and the *Center of Full Employment and Equity* (http://e1.newcastle.edu.au/coffee/). Alongside these institutions, Job Guarantee scholarship continues as part of the larger research program at the *Binzagr Institute for Sustainable Prosperity* (www.binzagr-institute.org/).

The ideal model for a Job Guarantee program is to institute a federally funded, locally administered program that puts all those with the willingness and ability to work into paid employment. The ideal model is a universal program. Variants of the universal Job Guarantee proposal emerged and includes the Roosevelt-era New Deal projects of the Great Depression era; more recent examples include the *Mahatma Ghandhi National Rural Employment Guarantee Act (MGNREGA) of 2005* which currently offers up to 100 days of paid work for Indian rural workers, Argentina's *Jefes y Jefas de Hogar Desocupados* (*Program for Unemployed Male and Female Heads of Households*) which targeted rural households with children and offered paid employment to those heads of households (Kostzer 2008), and *Ghana's National Youth Employment Program* of 2006 to combat the staggering rates of youth unemployment in Ghana (Dadzie 2013)—these are just a few among many other examples.[1]

The implementation of such of a program requires the alignment of political, economic, and social forces. No former, or existing, Job Guarantee program represents a universal program open to all workers. Nevertheless, all the programs enacted have had profound, positive social impacts for its members and society as a whole. One of the goals of this book is to not only introduce readers to the ideal model(s) of the Job Guarantee policy and its variants but to delineate the many economic and social benefits of the program. To this end, this book concentrates on the social aspects of the Job Guarantee program, specifically how the design and implementation of the program combats ecological destruction and promotes social and economic equity among genders, classes, and races in the developed and developing world.

Before briefly introducing the many benefits of the Job Guarantee program to which this volume expounds, it makes sense to first bring readers up to speed who may be unfamiliar with the foundations of the Job Guarantee approach to full employment. The heart of the Job Guarantee proposal is for the federal government to provide initial finance for the creation of federal, state, and local employment offices; and then, after the initial buildup, provide continual funding in perpetuity for these offices to hire labor directly into guaranteed public sector employment. In addition to these offices, community and non-profit groups may apply for funding through the program to hire workers for public projects already in place.

The Job Guarantee program operates in a countercyclical manner, hiring labor during economic downturns and selling labor to the private sector during economic upswings as workers leave public sector employment for more lucrative positions in the private sector. The ability of workers to shift from employment in the private sector to public sector employment (and vice versa) promotes macroeconomic stability by maintaining higher levels of final demand during economic downturns (Murray 2013). The degree of maintenance is predicated upon the difference of the wages offered in the private sector and the Job Guarantee wage. To this end, some proponents advocate for a universal hourly public sector wage and benefits package (Wray 1998, 2012; Burgess and Mitchell 1998). The advantages of a uniform wage policy is that the Job Guarantee wage puts a floor on wages and benefits to which private sector wages cannot fall below. In this manner, the Job Guarantee program also has the ability to incentivize the private sector to provide a socially beneficial compensation package by compensating its own employees in a similar manner. This wage-benefits model has come to be known as the "universal basic wage" model. Nevertheless, this is not the only way wages and benefits can be structured. Another model proposes workers enrolled in the program are offered both responsibility and compensation in a comparable manner to jobs performed in the private sector for given levels of skill, responsibility, and experience (Harvey 2013). In another model, the Job Guarantee has a three-tiered wage structure dividing employments into unskilled, semi-skilled, and skilled categories, each with a commensurate wage (Kaboub 2013). Through the partial or complete maintenance of wage-income, the Job Guarantee program has the potential to substantially dampen economic recessions; the degree to which is predicated upon the wage-benefit scheme that is implemented. This achieves macroeconomic stability by

maintaining consumption patterns of workers, smoothing out business cycles, and stabilizing investor expectations at the local and national level.

The Job Guarantee also has the potential to increase worker productivity, especially when complemented with an education and training component. Increasing innovation in technology that structurally changes the way we live, work, and play fuel the global twenty-first-century economy. This model of creative destruction requires a robust model of education and training, one that is responsive to the changing needs of regional markets and national economies (Wisman and Reksten 2013). Through education and training, the Job Guarantee sector can take the lead in developing and investing in alternative green technologies. The public sector is the only economic sector that has the means to invest in alternative technologies; because unlike private businesses, it can divorce itself from the profit motive. Many existing federally financed goods and services are not economically profitable, but societies decide that they serve a larger social benefit; current examples include government investment in mass transit, national parks, and the investment in public education, to name just a few. In a similar vein, part of the education and training component can be orientated toward these and similar welfare-enhancing programs. Specifically, federal governments can use the Job Guarantee program as a means to seriously address the dual problems of ever-increasing natural resource use and climate change through the teaching and adoption of a "green economic" system of development alongside traditional workforce development programs.

Many of the historic and contemporary variants of employment guarantee programs implemented worldwide have prioritized green jobs. Examples include the Civilian Conservation Corp in the USA which focused on ecological conservation and the development, and protection of state and national parks and US national forests (e.g. Rose 2013), the *MGNREGA* in India which, among other measures, sets aside 20 percent of their expenditure on the construction of water conservation and water harvesting structures (Ministry of Rural Development 2015, and Chap. 10 of this volume), and the *Ningxia Ecological Immigration* program in China which focuses on the protection of an ecologically fragile region while supporting local agriculture such as "goji berries, wine grapes, and other exotic local produce and to develop the dairy and wool industry" (Li 2013).

The most ecologically sustainable models of economic growth and development are ones that center on the needs of local communities.

China's *Ningxia's Ecological Immigration Program* and Argentina's *Jefes de Hogar*, where 87 percent of the implemented projects focused on community's needs (Tcherneva and Wray 2005), are perfect examples of sustainable Job Guarantee programs. These programs specifically target the economic needs of the unemployed by offering paid employment and promoting economic development through employment projects focused on the needs of local communities and supporting localized industry.

The Job Guarantee approach to full employment and sustainable economic development is in sharp contrast to the traditional approach toward economic development. The traditional model is an export-led system of growth based upon the failed model of comparative advantage, free markets, and free trade. In reality, global capitalism is an exploitative system; one that takes resources away from developing regions and allocates them to wealthy, developed, parts of the world.

This perverse redistribution of resources is evidenced on a global level, known as the Prebisch-Singer hypothesis, and is central to the dependency theory, which goes further to claim that the impoverishment of the developing world to further enrich wealthy nations is built into the structure of the global economic system. The proliferation of free trade worldwide led to the growth in commodity exports that has outpaced the growth in the value of these commodities. The outcome is that the poorest nations that take an export-led growth approach must continually ramp up production of exportable commodities just to maintain the aggregate monetary value of their exports. The result is that the rich developed world benefits from the extra volume, while the developing nations over-produce, engage in monoculture production, and move toward the production of cash crops (Cato 2009, 123–137). The combined effect is that free markets and free trade strain the natural resources of developing countries without improving their economic position. Likewise, the over-consumption of resources and commodities by rich nations is creating ecological destruction that may soon be irreversible. There bears a close, positive correlation between the growth in free trade and the growth in carbon dioxide emissions. As Molly Scott Cato put it: "Such a system is efficient at generating profits—by concentrating production in countries with low wages and low standards of environmental protection, and concentrating consumption in the wealthier countries—but inefficient at using the capacity of the planet to absorb pollution" (2009, p. 130).

The counter to the neoliberal model of export-led growth is that true social, economic, and ecological sustainability for both developed and

developing nations can be had by promoting local economies that are human focused rather than market focused (ibid. 132). Local self-reliance encourages local production with local labor and local resources and promotes local consumption. In its broadest sense, local self-reliance is to "stop the leakage" of natural, created, and monetary capital from leaving local communities so that the community has the physical, economic, and social capacity for self-sustainability (Morris 1982). Self-sustainability includes meeting the biological needs of the community through local agriculture; meeting the economic needs of the community through investment and reinvestment in local businesses; meeting the financial needs of the community through local finance and community-centered banking; and meeting the social and psychological needs of the community through time-banks, time-sharing, and the development of participatory democracies.

To do this, communities require local resources. Local resources are attained by first meeting the social, economic, and financial needs of the community. This means shifting emphasis away from export-led growth and encourages local economic development through investments in local agriculture, localized training and education, and developing and equipping small local businesses focused on the community and local economic development (Gunn and Gunn 1991, pp. 22–58). Localized Job Guarantee programs further rely on the formation of alternative institutions alongside traditional institutions. For example, Forstater (2013) suggests municipal confederalism as a framework for which a local Job Guarantee program can be implemented. Under this model, policymaking is based on the local community engaged in participatory democracies and where the administration of the Job Guarantee program is based on confederal councils. Under a participatory democracy model, a Job Guarantee program redefines what is meant by useful work. It has the potential to structurally change the way economies operate toward localized production that focuses on humanity rather than the market.

With its many social benefits, perhaps the most important benefit of a Job Guarantee program is that it acts as a labor-market buffer and thereby eliminates the staggering social costs of unemployment. These costs include inequality of income and wealth, typically along racial and ethnic lines, incidents of depression, suicide, ill physical health, family disruptions including divorce, school-dropouts, increases in crime, ecological destruction specifically in rural and poverty-stricken regions, and heightened racial and ethnic tensions against minorities and rural populations (e.g.

Fryer 1995; Goldsmith et al. 1996; Sen 1997; Theodossin 1998; Darity 1999; Harvey 2000; Watts and Mitchell 2000; Biddle 2001; Wray and Forstater 2004; Laylord 2005; Li 2013; Forstater 2014, Darity and Hamilton 2012).

Given the staggering social costs that chronic unemployment has on individuals, families, and communities alike, and given the failed neoliberal agenda, the need for new progressive policies that simultaneously and actively combats chronic unemployment while promoting the public good becomes all that more obvious. The interweaving problems of chronic unemployment, social inequality, class conflict, racial injustice, crumbling communities, and ecological destruction can be refocused and viewed as opportunities for policymakers to create institutions that promote full employment, solidarity, and sustainability.

Notes

1. For a more in-depth look at some of these programs and to learn about other Job Guarantee proposals, see Murray and Forstater (2013b).

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CHAPTER 2

Unemployment and Transformational Growth in the Long Run

Edward J. Nell

Balanced growth that 'lifts all boats' is a theoretical fantasy, useful only in explicating some technical points (Hicks 1976b).[1] It is not a description of any kind of reality. Growth has *never* taken place in such a way; simple, steady, and proportional expansion is simply not a realistic possibility. Growth is always unsteady, unbalanced, and frequently it is destructive. Growth is essentially *transformational.* It is a process of change, and change entails winners and losers. Schumpeter described it as a process of 'creative destruction', and the destructive effects may often be more apparent than the creative.

Metaphors aside, growth is never purely economic. The processes of growth transform societal institutions, not only expanding but also altering the character and mechanics of markets as innovations are introduced. This brings about one of the greatest changes of all—the shift of population from rural to urban, from agriculture to industry and services.

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2.1 Breaking up Traditional Societies

There is a pattern of development that is virtually universal. All processes of development lead to changes in traditional agriculture such that labor leaves the countryside and migrates to towns and cities, which expand and develop industry and more advanced services. But not all who leave rural life will find work in the new cities. As industry develops, it will become more mechanized, displacing labor; as services develop, they will become more information-intensive, putting new requirements on labor. Both of these processes expand the government's range of activities and increase its share in total output. To understand this, and see how unemployment develops, we need to explore the paths along which societies move from traditional to modern.

2.1.1 'Traditional Society'

'Traditional society', as we shall use the phrase, covers a wide variety of socio-political formations, including among others feudal systems, absolute monarchies, and certain kinds of military dictatorships, so long as they are characterized by certain important features[2]:

- Traditional society and the economy embedded in it are static; change is rare and comes about gradually.
- The division of labor and the organization of work, and the system of authority, are governed by tradition, sanctified and legitimised by religion.
- The social positions that people occupy, the property they dispose of, and the work they do are governed by birth and the rules of the kinship system. Kinship, clientship* and long-term social relationships provide the basic network of contacts for economic and social activities.
- In daily activities and in various kinds of planning, as well as in times of crisis, when looking for guidance, the rule is to look to the past, to what the great figures have done, to what venerable teachers or legendary religious figures have said.
- Because traditional economies generally have an agrarian majority, daily work and normal lifestyles for most people will be close to nature; the cycles of animal life, the rhythms of the seasons, and the ebb and flow of planting and harvesting govern the pace of life.

- Work and the organization of social life, and most forms of wealth, will center on the land and how it is managed, except for the craftsmen and merchants of traditional, usually small, urban centers.
- A great deal of economic activity is conducted in real or barter terms; money serves only to settle the balances of accounts, to support long-distance trade, and to pay certain fees and taxes.

In effect, this is a 'full employment' world; there is a place for everyone, and everyone is supposed to be in their place.

The developed world differs in every one of the categories listed. It is dynamic and innovative; technological and social changes are the norm. The division of labor and the organization of work are methodically calibrated, and often adjusted in accordance with the requirements of technology and the principles of management. Lifestyles are the result of economic choices interacting with socially determined preferences and constraints, subject to rational criticism. Planning and development, especially the decisions of government and private investors, are governed by expectations of the future, not by tradition and the past.

Nature is something to be controlled and mastered by science; the rhythms of nature are supplanted by the conventions of time. The developed world runs by the clock. Capital, rather than land, rules, and capital finds its market expression in money, which is the universal standard and primary regulator of economic and social activity.

Traditional society looks to the past for guidance. By contrast, capital is inherently forward-looking. Indeed, the value of capital is given by the discounted sum of *future* net returns, a completely opposite perspective to that of traditionalists. Capital looks to the 'new and improved'; as the saying goes, 'sunk costs are sunk'—tradition and the past are not that important, indeed, may be obstacles.

European Colonialism for the most part left the domestic economies of traditional societies intact, without much affecting their hierarchical social relationships. However, in India, most of Africa, and parts of Southeast Asia, it did succeed in generally co-opting members of the elite and turned them toward Westernization, undermining the traditional culture. The metropole saw the conversion of local elites to Western ideas as crucial to upholding the colonial structure. They were encouraged to think along capitalist lines in business and to re-examine industry and agriculture scientifically. Modern transportation and modern sources of power were introduced, though mostly for the purpose of exploiting natural resources.

When the colonies rebelled and broke away, the elites tended to remain oriented to Western ideas. After independence, only the skeleton of traditional society remained; the old economy and kinship system was left largely intact, especially in the countryside, but the traditional system was hobbled by the lack of viable leadership. Headless, its elite looking to the West, the traditional order could not respond to pressures or adapt. Yet most such elites were not strong enough or imaginative enough to create a new world on their own—with Ataturk in Turkey perhaps being the exception (though now we have China and perhaps India).

2.1.2 From Countryside to Town

Development is a change from the traditional system to a modern one, and it begins largely through a shift of the workforce from the countryside to the cities. This pattern can be seen everywhere; it is the dominant movement of people and economic resources of the last three centuries, even longer, perhaps, for it can be seen on a smaller scale throughout the last two millennia.[3]

In the aftermath of World War II, throughout most of the developing world, there was significant resistance on the part of urban elites to movement from the countryside to the cities (Davis 2006). A large influx from the countryside would threaten to overwhelm city services, create slums, ruining the cityscape, garbage and sewer overflow might spread diseases, and the unemployed and homeless squatters would very likely turn to crime. Unions likewise feared the influx of unemployed migrants from the country; they would tend to drive down wages. Urban growth in the developing world was slow during the first two decades after World War II, but it has increased exponentially since then.

The changing patterns of response partly represents increasing pressures in the countryside—marginal farmers and laborers have been forced out—but it also represents not so much a change of heart on the part of urban elites, as a change in the relative power of developers in the urban elite. Real estate interests came to realize that the influx was good for them (Davis 2006). This was partly driven home by problems of counterinsurgency and civil war, and partly it represented a consensus among the political forces that overthrew anti-development dictatorships. There have been many different kinds of urban responses to the influx, but most involved state-led efforts to create housing and provide services, for the most part too little too late, and too badly planned. But no matter, these

responses all meant a state organized flow of money into real estate, offering excellent opportunities for the well connected to profit. The problems of the poor can be opportunities for the rich.

In Turkey, usually considered a successful case, we can nevertheless see how prolonged and fragmented the process of change is. Driving into Ankara from the airport, approaching the outskirts, a visitor will come upon new high-rise apartment complexes, each with a brand new concrete mosque. Older people from the countryside live here; they are walking on the streets; the women small, stooped, covered from head to toe, dressed in black, the men wearing modified traditional garb. Closer to the city center, we come upon older, small-scale housing, with younger people. Here, the men are driving, but not the women. The men wear mostly Westernized clothes, but the women are still in head scarves. In the center of Ankara, there is Middle East Technical University, the MIT of Turkey. Only Western clothes are to be seen, and not that many, either, as young women in short shorts with bare midriffs buzz by on their Italian motorbikes.

Starting from a traditional economy, development takes place when new methods and new products are introduced, raising the productivity of labor.[4] Typically, these innovations appear first in urban centers before spreading to the countryside. In the cities, they lead to new centers of production, sometimes to whole new sectors, creating opportunities for employment and for investment. In the countryside, however, the typical impact is to displace labor, as methods of farming become more productive, and the same acreage will both produce more crops—and require fewer workers. It is important to understand that labor is *forced out* of agriculture; small farms go under and are bought up or abandoned. Farm laborers are let go and can no longer find jobs. As rural incomes decline, shopkeepers in small towns have to close down, and professionals—doctors, lawyers, accountants—will leave.

Another way of putting this, perhaps, is to note that Malthus was fundamentally wrong. He argued that the output of food could only grow arithmetically—output would increase as more acreage was brought under cultivation—but birth rates rise geometrically, like compound interest, and therefore population would eventually outstrip agricultural production. If this were so, there never would be migration from the countryside to the towns; indeed, as food shortages grew, the migration would be the other way, as desperate families sought little plots of land on which to eke out a bare living. But in fact food production not only grows exponentially,

through breeding, technical progress, and now genetic engineering, but now it grows faster than population!

It is also true that people are attracted to the cities and towns by the higher wages available there, even though the chances of landing a high-paying job may be unlikely, at least at first. But there are also easier opportunities to find in the informal economy, although such work may be unstable, illegal, and dangerous. Economists, unfortunately, have misunderstood and trivialized the whole subject of rural to urban migration. They have tended to explain the movement of population as a *matter of choice*, focusing on the gap between high urban and low rural wages as the chief incentive driving the migration (Harris 1970). This is a bad mistake. It reduces a centuries-long transformation of the economy to a response to a sticky price differential in an imperfect market. Given the importance of this migration, it will help to survey some of the problems with this perspective.

Economists try to explain migration using a formula called the 'gravity' equation: an urban area attracts migrants—they are pulled by its gravity—according to a modified 'inverse square' law. This sounds very technical and impressive, but it has no behavioral justification. Adding economic variables reduces migration to an 'individual decision', made in response to 'incentives'. This trivializes important and far-reaching social changes, which alter the landscape of opportunities and change traditional relationships, including land use norms and contracts.[5]

First, while there is certainly an important difference in money wages, when real subsistence is figured in, the differential will usually be smaller and may disappear altogether. Indeed, in the nineteenth and early twentieth centuries, life expectancy and the standard of living of the working class seems to have been higher in the countryside in England, Europe, and the US. Only later did both become higher in the cities. Yet the great migration began in the earlier period (Bogin 2001).

Second, and more important, focusing on pay differentials tends to draw attention away from the fact that new technologies are now, and have been for 40 years, revolutionizing the countryside and changing patterns of land use and management. First, we had the Green Revolution, now it is biotech and genetic engineering, together with new equipment and new methods of irrigation. All have raised productivity and increased output to the point where, in the aggregate, the world no longer suffers from food shortage—and that is new in human history. But 'in the

aggregate' is the catch; overall, there is enough capacity to feed the world, but that capacity is often not available where it is most needed.

One implication of this is that new technologies and increases in overall productivity can be extremely damaging to poor and marginal farmers. Demand for agricultural products is not very flexible, especially in the short term; it depends on population and conventional standards of diet, neither of which change very fast. The result is that when new technology leads to an increase in supply, prices are likely to fall, perhaps sharply (as in the last two decades), but demand is unlikely to increase much. Substantially higher productivity combined with limited additional demand means that fewer agricultural workers are necessary. Meanwhile, the drop in prices reduces incomes on marginal farms; even with additional effort, there will be a point at which such farms cannot make ends meet, and this forces marginal farming families off the land. These two pressures compel an exodus of labor; we have seen this in Mexico, in India, in Africa, and many other places. It is important to understand that this exodus from the countryside is accompanied by increases in both labor productivity and output in agriculture.[6] This is in line with the facts, but it is contrary to what some standard models would have us believe, which is that the outflow of labor from the countryside leads to a drop in output!

Third, the conventional models of migration assume a diminishing returns technology in the countryside; yet there is good evidence that modern agricultural technology provides for important economies of scale in many areas. Models of trade often make similarly unrealistic assumptions, yet diminishing returns are usually present only when the technologies are backward. Some conventional models—the Solow growth model, for example—even assume diminishing returns in industry, which would only be true for Craft technologies. Apart from specific cases, constant returns normally prevail in Mass Production and increasing returns in High Tech (mistaken assumptions about technology, unfortunately, seem to be widespread in economics, cf. Nell 1998a).

Finally, the conventional approach treats migration as labor leaving agricultural employment for the perhaps uncertain prospect of urban employment. The implication is that agriculture will now face an impending shortage of labor—so that as workers move to the city, rural output will have to decline (although productivity at the margin will rise). This follows from the conventional model, but it is simply wrong. Nowhere in the world is there a general shortage of agricultural labor. Agricultural

productivity has been increasing everywhere—across the board, not just at the margins—as a consequence of science-guided innovations. By failing to acknowledge the coercive pressures on labor and by adopting a convenient but inappropriate 'supply and demand' framework, the conventional approach has drawn a misleading picture.

To repeat: labor has been pushed out of the countryside for a complex array of reasons: sometimes because of changes in crops that lead to economies of scale; sometimes because of changes in land holding and land use that make it possible to draw on improved technology; sometimes as a result of improved seeds and fertilizers that raise land productivity, requiring less labor; and, as has happened for centuries, because of the introduction of labor-saving machinery and equipment.

Labor in modern industry, located in towns and cities, generally requires a workforce that can follow written instructions and is not chronically ill. Wages therefore must be high enough to cover education and health. Everyone has to pay taxes in the cities, so wages must be high enough to allow workers an adequate standard of living after taxes. Everything is monetized in cities, so wages will cover many things that would be obtained by barter and swapping in the country. In the formal economy, at least, urban wages and working conditions will tend to be governed by legal and institutional pressures, ensuring that these requirements are met. The informal economy may be a different story.

High money wages and expanding employment opportunities in the cities, combined with displacement of labor in the countryside, result in a population shift as families move from farm labor in the countryside to factory or service jobs in towns. The pressure in the cities rises from the (temporarily) sharp population increase, as better health services lower death rates before birth rates fall. An important byproduct of these changes is an increase in monetization, as money wages replace payment in kind. This introduces a new kind of insecurity, as the former patterns of barter exchange break down. These patterns offered protection from the vicissitudes of the market. With their demise, that protection disappears.

This process has been universal. Every country that has ever succeeded in developing its economy has seen a dramatic decline in the percentage of the population working in rural agriculture. On the one hand, productivity rises dramatically in agriculture as farming becomes mechanized, and as better methods are brought to bear on cultivation. Machinery and mechanical energy supplants the efforts of humans and draught animals. Tilling, planting, harvesting, and threshing are mechanized, and the labor

of tending and caring for draught animals is rendered unnecessary. In addition, scientific breeding, the development of new seeds, and new or improved fertilizers further increase productivity.

It is surely reasonable to assume that as agriculture becomes organized along business lines, long-term investment in agricultural improvement will keep pace with investment elsewhere. Competition will pressure farmers, large and small, to introduce cost-saving, output-enhancing innovations. Productivity in agriculture should therefore grow at least as fast as productivity anywhere else in the economy (as we noted, Malthus was wrong).

2.1.3 The Slower Growth of Primary Sectors

On the other hand, as the society becomes richer, the demand for foodstuffs and other agricultural products *grows more slowly than total income*. That is, as we experience a rise in income, after a point, our demand for food and other products of the countryside, while it may increase, does not keep pace. Instead of eating more, we spend our increased income on other things, generally manufactured goods. As incomes rise, the percent spent on primary goods tends to fall and that on manufactured goods to rise—for a time. But then, as incomes rise further, the percent spent on manufactured goods will stagnate, and as we have recently seen in the advanced world, begin to fall, while services and hi-tech goods will rise.

The changes in the character of consumption as societies become richer are a fundamental feature of Transformational Growth (Fogel 1994; Pasinetti 1983; Gualerzi, 2001). When incomes per capita are low, most money is spent on goods we consume personally or individually, or at least, as a family or household. But as incomes rise—and technology develops—we spend more on things we do in conjunction with others, outside the family, even with strangers, things that we do collectively. Think of telephones, of communications and the media generally, of getting an education, of travel and entertainment. These are all things we do with others, usually with many others. As we become richer, we devote more and more of our time to improving our talents and using them to improve our lives (not to mention enhancing our assets and pampering ourselves).[7] But it is difficult if not impossible to develop and exercise one's talents in isolation; instruction and criticism is necessary. Learning is the key, and this can seldom be done alone. Indeed, the same applies to luxurious indulgences, such as hair salons, spas, and therapy centers. Much of the luxury comes

from the interaction with other patrons, just as learning is enhanced by the other students. Curiously, at the higher level, then, neither self-improvement nor self-indulgence are *individualistic* activities. Yes, one can indulge by overeating, and that is an individual matter. But therapy and spas, travel and theater, education and entertainment inherently involve other people; they are activities we jointly undertake. Consumption changes character systematically as societies become richer. We will come back to this later.

For now, the point is only that spending on basic goods as a percent of income falls as wealth and income rise. In fact, not only does household and business spending shift away from basic goods—food, clothing, shelter, and energy—as income rises. *Primary inputs* into these basic consumer items become a smaller proportion of these budget items as the economy grows richer. That is, in early stages of development, the food we eat, the energy we use, and the clothing we wear come to us directly from the countryside, with a minimum of processing and refinement. But as the economy becomes richer, the products of the countryside undergo more and more refinement; processing, packaging, and marketing become a larger and larger percentage of the revenue spent on these budget items. In summary, the substitution of machinery and modern energy for human and animal labor, and the improvement of crops and fertilizer, raises *productivity* at a rate at least equal to the growth of total income. Meanwhile, the demand for primary inputs grows more slowly than total income; thus, inevitably, labor has to be released from agriculture.

When development gets underway, a huge population shift begins, driven by market forces fueled by the growth and spread of capitalistic business. (The Marxian tradition refers to this as the growth of the 'Reserve Army of the Unemployed', arguing that it is an inescapable consequence of capitalist development (Shaikh 2016).) All over the world, we have seen or are seeing a massive outflow of families from the countryside and small towns to urban areas, doubling or tripling the urban populations, as in the cities of North Africa. This is Rural-to-Urban Migration (RUM)—a global phenomenon. As the population shifts, death rates fall, so the population expands and becomes younger on average. Since it all usually takes place in an unplanned, inadequately foreseen, and chaotic way, these broad changes tend to be accompanied by a huge rise in unemployment and personal insecurity, especially among young males. Poverty typically increases, and inequalities are intensified. This is the origin of the worldwide phenomenon of unemployment expanding in the midst of increasing need for labor to remedy social and environmental ills.

Contrary to the optimistic predictions of many mainstream economists, there is no reason to assume that the expanding world of urban industry and modern services will absorb the population displaced from or leaving the countryside (plus those resulting from the drop in infant mortality). Economists argue that excess labor will drive wages down—but this is a rational choice of individualism again. It is irrelevant. Lower wages would not lead to the hiring of workers whose skills are inappropriate or not needed. An old system, based on traditional technology and traditional customs, is breaking apart and new one, based on new technologies and new ways of living, is emerging. The new system may not need as much labor as the old, and generally would not need the same skills. There is no guarantee that those expelled from or leaving the old will find a place in the new.

Unemployment rates are huge and often rising all over the developing world. In North Africa, unemployment rates are staggering, in general, but among males (15–30), they sometimes reach 40–50 percent. Besides unemployment, which is widely underestimated, there is the related phenomenon of employment in the 'informal sector'—temporary, unregulated, often dangerous, or illegal. The informal sector encompasses smuggling, rip-offs of everything from clothes to handbags to DVDs, illegal drugs, prostitution, organized begging and stealing, and many related activities. But it also includes unlicensed carpentry, plumbing and electrical work, production in unlicensed or hidden premises to evade taxes, and many otherwise ordinary activities that are concealed to evade taxes and regulations. Employment in this sector is uncertain, unprotected, often illegal, and usually poorly paid. Yet it reaches nearly 50 percent of the labor force in Venezuela and Peru. Unemployment, illegal or informal employment, and underemployment—unreliable, temporary work inadequate to support a normal life—are serious issues.[8] The present situation is a tinder box, one that has already burst into flames in North Africa, the Middle East, and in Eastern Europe, and it could catch fire again any time.

2.1.4 What Transformational Growth Brings About

2.1.4.1 Economic Implications of Urbanization

Any form of globalization, however much we re-orient it humanistically, will bring technological innovation and this in turn will lead to RUM in developing areas—and in many developed ones. A major effect of

urbanization is to put pressure on social infrastructure all forms of which must expand and adapt: public amenities, government offices, public health, transportation systems, and municipal services. There are new environmental problems as well, as new kinds of pollution emerge. Of particular importance is the pressure on the schools and training institutes. Young people will face patterns of work and life for which their parents and elders cannot prepare them; they will need to develop contacts with adults who can teach them new skills and work habits. These new pressures not only require an increase in social infrastructure, they demand a larger government administration. The rise in urbanization sets in motion a dynamic of government expansion, the Growth of Government, (GroGov). These two large-scale, long-term dynamics, RUM and GroGov, are the two main features of development.

Let us look more closely. Investment and economic growth take place, so that agriculture begins to change and improve, while at the same time factories are built in the cities. These combine to generate RUM. As the new population flows in, whose higher fertility generates population growth in the cities, two developments take place: government greatly expands in size and agenda, and the 'informal economy', encompassing illegal and unlicensed activities, flourishes. If the government expands efficiently and plans for housing, schooling, new jobs, and so on, in pace with the influx of new workers, the informal economy may not expand very much. But if government does not anticipate the inflow and expand to manage it, the result will be a surge of illegal housing and illegal activities.

These problems are made all the more intense as life expectancy rises. In particular, infant mortality usually declines as public health measures take effect. This means that the population grows as the average age falls. In North Africa and the Middle East, half the population is under 20! (Cynthia Lloyd, G Meier). While slightly less dramatic, the statistics are similar in India and Southeast Asia. In parts of SubSaharan Africa, half the population is under 15!

The economic effects of the move from the countryside to the cities are varied and hard to predict. Some people will find their situation improved, while others will be out of luck. Many will manage one way or another but under uncertain and nerve-wracking conditions.

One widespread economic effect does seem clear. In general, there tends to be a serious erosion of asset values, particularly in respect to the value of assets as collateral. Asset values are undermined both in the areas

from which population is moving and in the areas into which it is flowing. This is of major economic importance, since it will impair the ability to mobilize credit. Let us see how this works.

The outflow from the rural areas leaves villages, towns, and family homes and family farms underpopulated or depopulated, undermining traditional institutions. When villages and homes are abandoned, ownership rights may lapse, or fall into an ambiguous state, especially if there are land taxes that are no longer being paid. Property value as collateral is weakened, so credit dries up and investment opportunities evaporate, especially for small businesses. Sooner or later, the institutions offering credit will likewise disappear. Once a population shift gets under way, the decline in asset values and opportunities only accelerates the process. The process is in a sense self-reinforcing, and it tends to 'overshoot'; that is, asset values are reduced even more than is justified in the light of the migration, and this, in turn, tends to constrict business even further, putting still more pressure on asset values.

The inflow into towns, however, will not raise asset values or increase investment opportunities in a way that would tend to offset the loss of value in the countryside. It may not raise them at all, in fact; it could depress them. Without government controls, the towns and cities will be swamped, with people moving onto vacant land regardless of ownership and property, developing businesses without licenses or permits, and setting up shops and building housing without regard to codes. This happens not because they want to defy the law, but because they have to do it. The institutions of the state and the legal system are overwhelmed and unequipped to handle the strain.

Equally importantly, many established businesses will not want to see permits or licenses issued because they fear new competition. Furthermore, it may be in their interest to keep the newcomers 'extra-legal' for another reason: they can exploit them. They can hire undocumented workers more cheaply and drive good bargains with unlicensed service workers and technicians. Many developers want to keep control of their land for other eventualities, but still earn a high short-term return by allowing it to be used extra-legally, outside the conventional system. So shantytowns spring up, and flourish, only to be bulldozed in turn. Beggars and peddlers are allowed one day and cleared out the next. Unlicensed electricians, plumbers, and carpenters perform skilled workmanship, while holders of licenses, who hire them, sign off without sweating. In general, the newcomers will find themselves in a kind of symbiotic conflict with the established

residents. Because they are outside the system, they are unable to make it respond to their demands. They are unwelcome as voters, because they would constitute a new bloc that could disrupt the established balance of power. As a result, whatever advances they make, whatever assets they develop, have no sound basis in the law. Their positions are insecure, and their assets unsuitable as collateral for credit, hindering further development. Yet very often, they are the ones who do the basic work of the system.

Implications for the Family

The far-reaching impacts of these changes are not always appreciated. For example, in the traditional world, kinship ties were paramount. Skills were passed along from father to son, mother to daughter, jobs and social position depended on kinship, even the choice of marriage partner reflected family involvement and support. But in the new world, family and kin are likely to prove less helpful, sometimes even a burden. Fathers cannot prepare sons for the jobs they seek; the old skills may be worthless. Mothers cannot teach daughters the new fashions. The ties of family and kin will weaken and change character. (Indeed, these changes are the stuff of novels.) The women of the family may seek to play a less subordinate role.

In fact, as development proceeds, especially as more advanced technologies are introduced, it will become harder to develop successful businesses relying only on families and kinship groups. First, a very simple point, once machinery and mechanical energy is involved, the place of business and the place of living have to be separated. Machinery is too dangerous, often dirty and noisy, to be near children and family life. The business, the shop, and the factory will have to be moved away from the home.

But there is a further point, about the control and organization of work and business. When technologies and business practices were largely governed by tradition, a family or extended family could expect to develop within its ranks all the skills and specialized knowledge needed. Not so in the modern world. Family members will find that they cannot keep up; to compete, they will have to reach outside—which means that the direction of the business may not remain under the control of the family. More generally, households and businesses will become separate and distinct.

These changes will have a major impact on families and kinship groups. They tend to:

- Remove control over production and supervision of work from family—leading to separation of the place of work and place of living.
- Break up close ties of kinship; weakening the network of kin relations—leading to a focus on the nuclear and stem family.
- Remove many aspects of the socialization of children and adolescents from the family; parents can no longer teach the children the skills they will need in life, can no longer pass along the trade skills that will guarantee a livelihood.
- Remove much health care from the family—the skills needed have become too complex, and the family no longer has them.
- Remove care of the elderly from the family; once it has moved to relatively cramped quarters in the city, the family no longer has the space—or the time, given the new rhythms of work.
- Less traditional work in the home and more opportunities outside the home will lead to changes in the position of women, bringing greater freedom of choice—one consequence being a falling birth rate over time, another being tensions in relations between the sexes.

Such developments will leave many people at sea—uncertain about their roles in life, insecure, and unable to rely on traditional guidance. Life in the cities, for those who have newly moved from the countryside, will tend to seem anomic and rootless. It will lack the rich sense of community and kin characteristic of the small towns and countryside, where everyone knows everyone else. Neighborhoods will not adequately fill the gap; there is a lack of continuity and tradition.

These changes will tend to take place gradually, generating slow pressures for change, often unseen or misunderstood, leading to tensions that may be attributed to a deterioration in morals or in the fabric of society. People will not usually see the larger picture clearly, and will be left uncertain and often angry as their expectations are disappointed. Fundamentalists offer resistance to these changes, and this can be presented as claiming the moral high ground.[9]

Changes in the Character of Government

During Transformational Growth, the government budget as a percent of GDP rises as GDP grows. We see as a result that high-income countries have large government sectors, low-income countries small ones. In general, in Transformational Growth, the government sector grows faster

than GNP as a whole, especially when GNP growth is rapid. Rents and the value of land also increase, and this tends to benefit the traditional landholders, who become rentiers. They are normally not part of the capitalist innovation and development, but are its accidental and unintentional beneficiaries.

The emergence of capitalism in towns comes in the form of a set of separations, a breaking up of the unity of traditional life, dividing activities that had been seen as one. Separation of function and division of labor, indeed, have been the basis for capitalism's success. These separations are often painful and may be resisted. But capital generates pressures for change that so far, worldwide, have proved irresistible.

For one thing, government and religion will have to separate. Government will have to preside over the changes being wrought by globalization and development; but traditional religion is largely opposed to change.

Further, there will be pressures to change the character of government. If development is successful, it will have to become professional, and take on more tasks—government and business will separate and become distinct. In general, as income per capita rises, the share of government in GDP also rises [*FTNT needed].

Successful development has always been grounded in constitutionally limited and popularly responsive government. The first implies that there is a 'private sphere' into which the government cannot enter. This becomes the sphere of individual choice. The second implies that when things go wrong, the people will be heard—for example, a labor movement will arise to protect the rights of workers, a consumer movement to protect the public. Governments must become responsive—a public sphere must develop. This is the basis of the connections between capitalism and democracy; democracy provides a 'voice' for those discomfited or ruined by transformational growth 'develop'.

But if government is not well managed, it is likely to become corrupt and dependent on police and the military. Unable to manage and direct the forces of change, it will have to rely on force to keep order. And, of course, this can be afforded by a state that has a large income from oil or other natural resources. But this means that the problems generated by economic development will not be managed; they will fester, and most prominent among them will be unemployment—with all the anger, anxiety, insecurity, and humiliation that accompanies it.

2.1.5 Globalization

Globalization only intensifies the forces described here. Not only is the world turned upside down by the forced migration to the cities and the new nature of work, but a new culture is developing in the cities, one shaped by radio, TV, movies, and the mass production of pseudo-designer products for 'self-expression'. The new generation adopts a new aesthetic with new hairstyles, body piercing, jeans and mini-skirts, and Western music. Senegalese youth wear Tupac Shakur T-shirts; in Tangier, it is the Oakland Raiders; and kids in Andean villages have tape decks and wear US T-shirts. People come to choose their self-presentation in terms of 'accessories'. Globalization brings jeans and T-shirts, cell-phones, Western music, radios, TV and movies, automobiles, and airplanes, to displace and replace traditional culture, and traditional values. Adults are enmeshed in the consumer society, young people move into the world youth culture—which is also based on purchasing manufactured products—in both cases clashing with earlier traditions. But it is not so simple; this catalyzes counter-pressures and reactions (Schlegel). Many members of traditional society resist more or less passively, gradually accepting some new ways, while rejecting others. Traditional intellectuals try to define a 'counter-modernization' (Berger and Huntingdon), while others revert to 'fundamentalism'.

Thus, the effects of the move to modernize—in effect, globalization—is to introduce processes that both increase the productivity of agriculture and create jobs in the cities. This is accompanied not only by necessary changes in the patterns of consumer demand but also media-driven, sometimes sensational, changes in lifestyle, which can create wholly new expectations about the possibilities of life. Those expectations are likely to generate an excessive flow of population from the countryside to the cities, 'overshooting' the economic possibilities that exist. This is all too evident in the cities of Latin America, throughout most of Africa, and everywhere in the Arab world. Asset values in both country and city decline, which, in turn, reduces the basis for domestic credit. It becomes harder to borrow and thus harder to set up a business. So the outcome of a move to modernize ultimately leaves a mass of un- or underemployed people living in insecure conditions, surviving through an 'informal economy'—anything from prostitution and drug trafficking to off-the-books carpentry and plumbing.

Finally, a word on the development of industry and the modernization of services. Once these begin, the process moves strongly in a definite direction; in industry, the trend is to increasing mechanization, in services the trend is to increasing information-intensity. In both cases, the tendency is, therefore, to rising capital-intensity—offering benefits, but posing problems. Machines augment the skills and power of labor, raising its productivity—but also displacing labor. Sometimes machines, especially now computer-driven machinery, will replace skilled labor—the equipment can perform some kinds of skilled tasks better and more reliably than human workers—but other times simple unskilled labor is displaced. Either way it means that investment generates less employment. In services, advanced services displace simpler ones, and the increasing flows of information demand higher skills. But developing economies often, perhaps typically, suffer from capital shortage, and from deficient education.

2.1.6 Changes in the Economy and Changes in Society

Given the forces of economic advance, let us consider some of the pressures this creates for relationships between social, environmental, and political aspects of society. Economic changes undermine traditions and set up incentives for social change. But in a traditional society, none of the basic features of the system are easily able to change much, and they most certainly do not change systematically. There may be important accidental variations, as when the Black Death dramatically cut the population of Europe. But systematic trends would not be consistent with social stability and the shaping of everyday life by tradition.

Yet it is easy to see that persistent trends in basic economic and social features would affect daily life, perhaps dramatically. When the character of work changes, or when life shifts from the countryside to the city, social networks may be torn apart; the skills and wisdom of the elders, for example, may come to seem less relevant, their connections less useful. Similarly, changes in population density are reflected in pressures on the land; changes in the environment affect the availability of resources. Changes in the standard of living are reflected in virtually all aspects of daily life, and so on.

Persistent economic growth will sometimes be orderly and stable, sometimes disorderly and volatile, but whichever it is, persistent growth has a wide-ranging impact on all aspects of life, from changes in population to drawing women into work outside the home. These changes

almost inevitably appear to undermine age-old practices and upset the accumulated wisdom of the elders. At the very least, customs and traditional wisdom have to be reinterpreted to fit the new circumstances. The impact of economic growth on social variables creates major culture shock; indeed, it sets up *a potential clash of cultures.* But this is a bridge too far for this discussion.

2.2 Economic Growth and Transformational Change

Let us consider, for example, once traditional society begins to be torn apart, what happens next? How does the economy work? Broadly speaking, there is a two-stage answer—a new economy first emerged, based on competition between small businesses and family farms, with a price mechanism that was weakly stabilizing, so tending to absorb the displaced labor in a growing urban and manufacturing system. This is what happened in the West. But over the long run, this system developed into a large-scale Mass Production economy, which no longer provided any market mechanism that absorbed labor or guaranteed full employment.

It is well known that in the nineteenth century, cyclical fluctuations show up more prominently in price data than in employment or output series, whereas in the twentieth century the reverse is true, particularly after World War II (Nell 1988). This reflects the Craft technologies of the nineteenth century and Mass Production in the twentieth century. Accordingly, Transformational Growth contrasts two general 'models of adjustment' of capitalist societies. These are both macro models, and both based on reliable relationships—firms selling in competitive conditions, households spending to support themselves. Each model is abstract and quite general, but nothing has been 'idealized'. Each is presented 'mathematically', although the functions are abstract and aggregate, so that fitting them to data would require careful attention to the definitions of the variables. But it is argued that the functions correctly represent directions of variation, and rough relative orders of magnitude, and that each represents the working of the system during a particular historical period.

The first claims that the early capitalist societies, running up to World War I, were characterized by a stabilizing 'price mechanism', so that when investment or exports fell, reflecting uncertainties and shifts in expectations, prices would fall relative to money wages, leading to a rise in real wages

and thus consumption spending (Nell 1998a, b, 2004). This was accompanied by a stabilizing but unreliable monetary and financial system; when prices fell or rose, interest rates would also fall or rise, tending to encourage or discourage investment. Unfortunately, this financial system periodically broke down and the price mechanism was not strong enough to cope with large shocks. But the general idea is that the price mechanism worked 'countercyclically' to enable these economies to adjust to various kinds of external shocks; the banking system complemented this, as the interest rate also generated countercyclical pressures.

Empirical support for this model comes from studies of 'marginal productivity'—Dunlop and Tarshis, and many others (confirmed by Nell 1998b)—found that an inverse relationship existed between real wages and levels of employment for pre-World War I data on advanced economies. Further support for the existence of a weakly stabilizing price mechanism comes from the re-examination of Gibson's Paradox; Nell 1998a, b).

By contrast, after World War II, there is little trace of such a mechanism; on the contrary, real wages appear now to be *positively* correlated with levels of employment, (Nell 1998b; Blanchard and Fischer 1989), and the Gibson relationship has disappeared (Klein 1995). In place of the stabilizing system, there is an unstable or volatile mechanism, the 'multiplier-accelerator', which actually amplifies external shocks (See Fair 1994). Stabilization has to be provided by the government, partly through its sheer size (a new feature), partly through the fact that its budget is weakly countercyclical, and partly through discretionary policy.

Contrasting these models creates a framework in which many different features of early and late capitalism (underdeveloped and developed economies) can be classified and analyzed (Nell 1998b). Moreover, the countercyclical adjustments in the markets of early capitalism created important pressures on business. Profits were squeezed, bringing risks of bankruptcy; to counteract that, businesses innovated in ways that made costs more flexible. The combined effect of these innovations was to change the system, moving it toward the second pattern of adjustment. Let us examine the transformation from a Craft Economy to Mass Production.

2.2.1 The Price Mechanism and Marshallian Technology[10]

The principles underlying the Craft Economy center on the short-run employment-output relationship.[11] In the Craft Economy (Nell 1998a, b), we can reasonably assume diminishing returns to the employment of labor, in relation to a normal position. Adding extra workers to work

teams operating given equipment brings progressively lower additional rewards, while removing workers leads to progressively larger losses of marginal output. There will be a point in between where the given equipment is being operated most efficiently. In general, it will take time and effort to adjust levels of employment; it will not be done lightly (Marshall 1890). Workers cooperate in teams that cannot be lightly broken apart or added to; all workers have to be present and working for a process to be operated at all; processes cannot easily be started up and shut down. So the Craft Economy not only has diminishing returns, it also has inflexible employment (Nell 1998a, Chap. 9).[12]

The model here is based on such an aggregate function, given in Fig. 2.1, where we have assumed a conventional shape and properties. (Aggregation will be based on long-run normal prices, those ruling at the optimal points. It might reasonably be assumed that there is a normal distribution of efficiency; then the aggregate function would be the representative average function multiplied by total capacity.) We are supposing, for a Craft Economy,[13] that output increases with labor according to a curved line that rises from the origin with a diminishing slope. (By contrast,

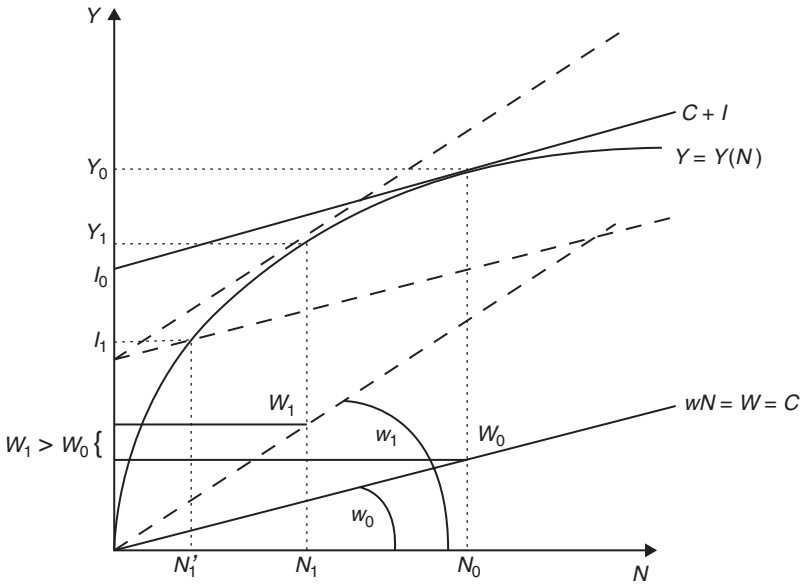

Fig. 2.1 Adjustment in the Craft Economy

Mass Production will be characterized by a straight line rising from the origin[14]). As a first approximation, consumption can be identified with wages and salaries,[15] while for the purpose of drawing the figure, investment can be taken as exogenous. As employment rises, the wage bill—and so Consumption spending—will rise at a constant rate, namely the normal wage rate. Total expenditure will then be shown by adding Investment to the wage-consumption line.

The diagram presents the aggregate utilization function, with output on the vertical axis and labor employed on the horizontal. (We will call this the 'production function', though it is *not* the 'true' neo-Classical concept, where each point shows the optimal adjustment of equipment.) The output function of the Craft Economy is curved, its slope falling as N increases (the Mass production line would rise to the right with a constant slope). The wage bill (including salaries) will be assumed to be equal to Consumption spending (transfer payments could be included also). No household saving and no consumption out of profits—but both assumptions are easily modified.[16] So the wage bill, also representing consumption spending, is shown by a straight line rising to the right from the origin; its angle is the wage rate. Investment spending will be treated as exogenous in the short run, so it will be marked off on the vertical axis. Aggregate demand will then be the line $C + I$, rising to the right from the I point on the vertical axis; its slope is the wage rate.

2.2.2 Adjustment to Demand Fluctuations in the Craft Economy

Suppose Investment is unusually low, below normal, so that this line cuts the utilization function at a point below the normal level of output and employment, N'_1. Since it is difficult to adjust employment and output, there will tend to be overproduction, and prices will fall. Since it is even harder to adjust employment than output, prices will fall more readily than money wages. Hence, the real wage will rise, from w_0 to w_1, (expressing the real wage in italics here). As a result the $C + I$ line will swing upwards, until it is *tangent* to the utilization function; employment thus settles not at N'_1 but at N_1. Note that this point of tangency will tend to be close to the normal level of employment and output, and it will be closer the more concave the function. In short, when Investment is abnormally low, the real wage will rise; if the rise in real wages is proportionally greater than the decline in employment Consumption will increase. This is illustrated in the figure; investment falls from I_0 to I_1,

prices fall, and the real wage rises. Clearly, the wage bill, and so consumption, is higher at N_1 than at N_0.

Conversely, suppose Investment were exceptionally high, or that the $C + I$ line had too steep a slope, indicating too high a real wage. In either case, expenditure would lie above output at any feasible level of employment. Under these conditions, prices would be bid up relative to money wages, and the $C + I$ line would swing down, until it came to rest on the utilization function in a point of tangency (Nell 1998a, pp. 455–7). Again, this point would tend to lie close to the normal level, being closer the more concave the function. When Investment is unusually high, Consumption will tend to adjust downwards.

Notice that adjusting the real wage to equal the marginal product of labor assures both unique equilibrium and maximizes profit.[17] When the $C + I$ line is tangential to the utilization curve, the distance to the wage line is at a maximum; if $C + I$ cuts the utilization curve, there will be two equilibria, and the distance between the intersection points and the wage line will be less than that at the tangency. (Given the real wage, profit rises with employment at a diminishing rate from the origin to the tangency point; it then falls at an increasing rate until it reaches zero at the point where the production function intersects the wage line.)

2.2.3 Growth and the Price Mechanism: Flexible Prices and the Golden Rule

The Craft Economy can be assumed to consist of a large number of small firms and farms, each normally operating at an optimal—minimum cost—level, paying wages to its workers, and what Mill called 'wages of superintendence' to its managing owners (Robertson 1931). Profits will be distributed as interest and dividends to banks and owners, respectively. (Taxes will support schools, police, and infrastructure, though the public sector will not be considered here.) Firms will be divided between established and new; established firms have a constant age structure of their workforce—new entrants are hired regularly as aging workers retire. Retired workers live off and consume their pensions. However, as a first approximation, apart from pensions and 'saving up' for consumer durables, worker households do not save. Permanent saving, capital accumulation, comes out of capital income, not from household wages—neither worker wages nor wages of superintendence.

As a first approximation, we can assume that all profits are saved and invested in setting up new firms, who hire new entrants to the labor force.

New entrants are cheaper, but also inexperienced; the new firms will have to go through an internal organizing and learning process (saving always equals investment because investment, the active force, affects prices, which affect profits, so that savings adjusts to investment).

Owners either invest profit income or they bank it, and receive interest, and the banks loan the funds to entrepreneurs who wish to start new businesses. Retired owners *do not* consume their capital (as retired workers do); they pass along the management of the firms they own, and live off the interest of their holdings. (If they saved for retirement out of their wages of superintendence, they will consume those savings.) When they die, they leave their capital to their children. If the rate of growth of the population of capital-owning families is equal to the rate of accumulation of capital (and family size remains the same, etc.), then wealth per head will tend to be constant.[18]

In Solow's approach, the growth of the labor force sets the growth rate of the economy. However, he does not offer an account of a market mechanism by which this will be brought about. He simply shows that there is always a capital accumulation path consistent with any rate of growth of the labor force—and then *assumes full employment*. The capital/labor ratio then adjusts appropriately.

This result—that the growth of labor sets the pace for the economy—may be correct for a Craft Economy, but only if it can be shown that it can be brought about by a market mechanism.

The argument will just be suggested here: starting from a balanced path, in which the growth of the labor force equals that of capital, if the growth of labor speeds up (slows down), *entry-level* wages will fall (rise), encouraging (discouraging) the formation of new firms. When entry-level wages fall, for example, expected profits will increase, so the marginal efficiency of capital (MEC) will rise, encouraging investment.[19] Entry-level wages are not currently paid, so a decline will not affect the current level of consumption spending.

The price mechanism explored above can be adapted so as to show the key elements in the process of growth in a Craft Economy. Measure Y/N on the vertical axis, K/N on the horizontal. Then a line rising from the origin left to right will measure I/K, the rate of growth. Add onto this the Wage bill per capita, the wage rate; the two added together will be aggregate expenditure per capita, and this will adjust until it is tangent to the production function. If it lies above, this will drive up prices, swinging the line down; if it is below the production function, prices will fall and the line will swing up (Figs. 2.2, 2.3, and 2.4).

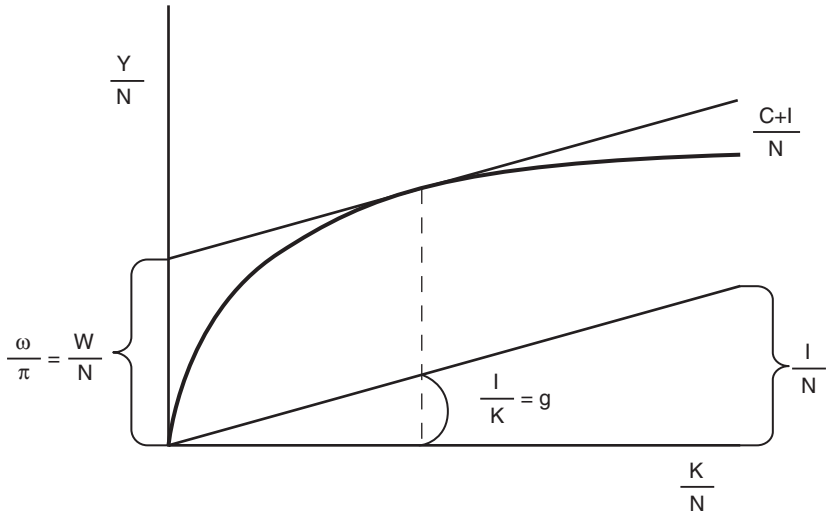

Fig. 2.2 The Tangency Solution

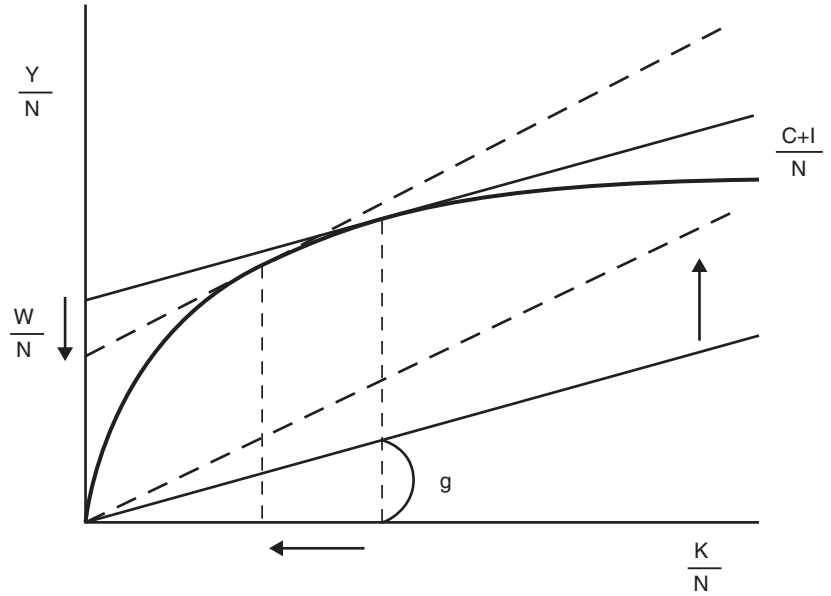

Fig. 2.3 A rise in the Growth Rate

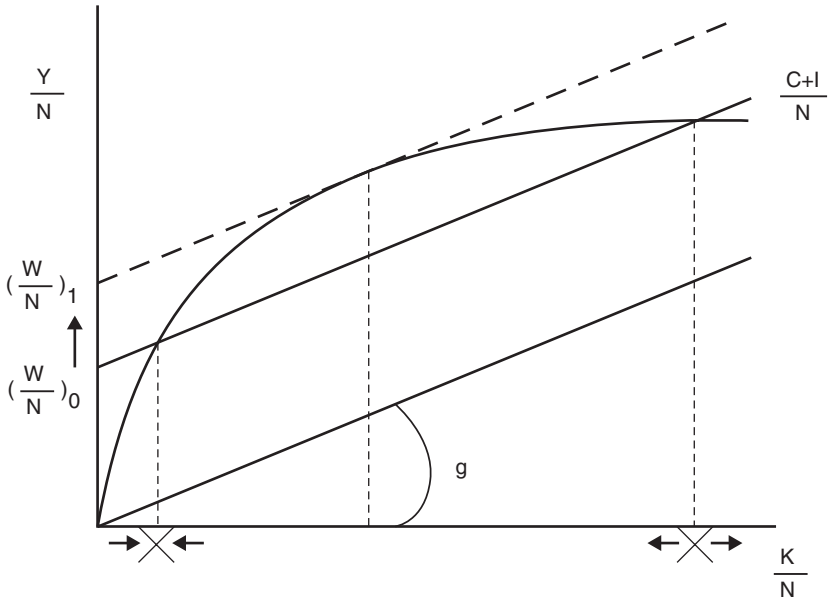

Fig. 2.4 A Rise in Productivity

The similarity of this to the Solow Growth Model is unmistakable; the figure has fundamental similarities. But Solow added an assumption that is usually overlooked: although he introduces the marginal productivity relationships for both the real wage and 'quasi-rents', he assumes that *prices will be constant* (Solow 1956, p. 79).[20] As a result, *there is no price mechanism in his model*: savings is assumed to drive investment and the equilibrium is determined by the changes in the capital/labor ratio brought about by saving. There is no justification for Solow's assumption of a constant given price level, nor does he pretend to offer one—but it completely changes the character of the model.

The figure sketched,[21] although looking just like Solow's, shows the working of a price mechanism, in which changes in investment impact on prices, so as to change the level of real wages. This changes profits, and profits are savings, which here adjust until they are equal to investment. The equilibrium will be given by the point of tangency; if the expenditure line is not tangent, then the price level will rise or fall, adjusting the intercept until the line just touches the production function. This equilibrium

maximizes profits; it has optimality properties, which might be expected in a neo-Classical approach, although they are not present in Solow's. Starting from an equilibrium, if I increases, raising the growth rate, then the expenditure line will swing up above the production function. But this will drive up the price level, reducing the real wage, so lowering the intercept until the line is tangent again. Similarly, if the real wage were too low, given a level of g, then the price level will fall.

The tangency between the expenditure line, with a slope of g, and the production function implies that the rate of growth will equal the marginal product of capital, which is the slope of the function. For example, a rise in g will raise the expenditure line above the production function, indicating demand pressure that will bid up prices lowering the real wage, swinging the line back down to tangency at a higher level of profits, thus leading to a new equilibrium. This tangency point instantiates the golden rule, and contrary to Solow, it is the true, market-driven equilibrium, based on profit maximization.

Note further that it also shows the importance of prices in the adjustment, *at all levels of employment or utilization*, contrary to Kaldor, for whom prices vary only at or near full employment. Solow has assumed fixed prices in an economy with diminishing returns and marginal products; this cannot be true. Kaldor, on the other hand, has (partly) flexible prices in an economy with constant returns and no marginal products. But if costs are constant, and demand varies at levels below full employment/full capacity, firms will tend to keep prices steady. If there is demand pressure at full employment, prices will undoubtedly tend to rise, but fully employed labor will be in a strong position to push for higher wages in response to the rising prices. Rather than there being a price adjustment that would tend to reduce the pressure, a wage-price spiral is likely to emerge. This could lead to an adjustment if prices rose faster than money wages, but if money wages outpace prices (as in the late 1960s in the US) then the demand pressure would most likely be intensified. Both Solow and Kaldor have failed to provide a proper role for the price mechanism in their approaches.

In this system, technical progress—increasing productivity—will be shown by a shift upwards in the production function Fig 2.4; if, initially, the expenditure line had been tangent, the upward shift would leave it now below the production curve, implying output in excess of demand, leading to a tendency for the price level to fall. The benefits of technical progress will be distributed by falling prices, with money wages constant, (as it occurred during the whole nineteenth century).

The first figure shows the tangency growth equilibrium; the second shows the adjustment to a rise in the growth rate—the real wage falls; the third shows the adjustment when productivity rises and aggregate demand is too low—the real wage rises.

The replicative growth process will exhibit a definite pattern, in which the growth of capital per worker will tend to equal the growth of output per worker, which in turn will equal the growth of the real wage. As indicated above, when the production function shifts up, the price level will fall, and real wages will rise. When the production function shifts up—disembodied technical progress—it means that production processes have been reorganized, so work is completed sooner (Nell 1998a, Chap. 7). Hence, more energy will be used, more materials will be processed, more wear and tear will take place; in other words, working capital is increased in proportion to the accelerated output. Hence, K/N will increase in proportion to the rise in productivity. This will also tend to be true for 'mechanization', where a proportional increase in K/N is just matched by a proportional decrease in N per unit of output. This will maintain the equality on the left and that on the right-hand side (RHS) will follow as before, from a rise in productivity leading to a proportional fall in prices.

As a result, the capital/output ratio and the rate of profit will tend to stay steady. With both of these holding steady, the shares of profit and wages will also be unchanged. This is the 'Victorian Equilibrium'.

As the economy grows, the banking system must grow *paripassu*, which means bank capital and bank reserves must be augmented along others with investment. The level of bank capital—the capital of the banking system—will support a certain level of bank loans,[22] while the difference between deposit and lending rates will provide the profits of banks. When this profit is reinvested, bank capital, and therefore sustainable bank lending, will grow at this rate. If the profit rate in banking is the same as in the rest of the economy, and the rest of the economy likewise reinvests its profits, and grows at the Golden Rule rate, then the credit money required will always be available.

This is an abstract, but not idealized, picture of the working of capitalism in an era of Craft industry and traditional agriculture, portraying a system that is self-adjusting in weakly stabilizing manner, with a weak tendency toward 'full employment', while tending to establish an equilibrium that can claim some optimality properties. It has some affinity with the traditional ideas of neo-Classicism, but it does not rest on rational choice foundations.

2.2.4 From Craft to Mass Production

Keynes accepted the idea that the price mechanism did adjust to ensure that the real wage equaled the marginal productivity of labor. He did not, however, explain how this equality was brought about in labor market in which behavior responds to money wages. In his view, the equality of the real wage and the marginal product justified calling the position an equilibrium; *but as reconstructed here, the argument shows that there will be a large number (on plausible assumptions, an infinite number) of such positions, besides the full employment level.* The way this works has been shown in a figure in which it is clear that price changes tend to move the system to a profit-maximizing position, for any given level of investment.

This certainly appears to be a *stabilizing* pattern of adjustment. Each position of the economy will be a combination of a level of investment and a level of consumption (equal to the level of the real wage bill), such that higher investment (driving up prices, lowering real wages) would appear to be associated with lower consumption spending. This is stabilizing. When investment falls, for example, prices will fall, and consequently real wages and therefore consumption spending will rise, offsetting the decline in investment.

But such a pattern of adjustment puts the burden on profits; prices would fall in a slump, and firms would have to draw down their reserves. Accordingly, firms should seek to develop greater flexibility to allow them to adjust the level of employment to market conditions, laying off and rehiring workers as demand changed. This provides an important incentive to innovate (Nell 1998a).

Keynes did not examine this. But what he saw is that price adjustment was *not* working to stabilize the system. On the contrary, fluctuations in investment appeared to set off destabilizing movements.

An important theme of his lectures was to explain this, showing that investment and consumption *moved together, not inversely,* thereby increasing volatility. This is a consequence of reducing the rate of diminishing returns, 'flattening' the production function. Furthermore, he argued that investment was the active variable, the causative force, while consumption (and saving) simply re-acted passively. So prices and employment could adjust in such a way that the real wage and the marginal product of labor were brought into equality, thereby maximizing profits, *while investment and consumption moved together, rather than inversely*, creating 'multiplier'-based volatility in the system. There is no pressure in this system to move to full employment, but each position can reasonably be considered an 'equilibrium'.

2.2.5 Changes in the 'Production Function': The Multiplier Replaces the Price Mechanism

When the curvature of the production function is considerable, the elasticity of the marginal product curve will be greater than −1, so a fall in investment will lead to a rise in the wage bill and therefore in consumption spending, as shown in the figure. But when the production function is rather flat, the elasticity of the marginal product curve will be less than −1, so a fall in investment will lead to a decrease in the wage bill and consumption spending, as indicated. In this case, there is not only no offset to the drop in investment—the effects are actually made worse. And that is the conclusion Keynes reached and tried to explain in the lectures he gave in Cambridge.

The variability of profits provides an incentive to change the technology so as to control current costs; the innovations must change current costs from fixed to variable, and this can be done by taking on additional capital costs. This will be particularly advantageous when there are pressures for the real wage to increase—at the higher wage, it will be worthwhile to mechanize, so in current prices, capital per worker rises, and the scale effects allow for greater flexibility in adjusting employment to changes in the level of demand.

Fluctuations in I will normally have some impact on N even in a Craft Economy. But there will be an offsetting movement in C so long as the curvature of the employment function is large. The price mechanism is stabilizing for the system as a whole, but the effect is that profits fluctuate sharply for individual businesses. So firms will be motivated to redesign their production systems to allow greater flexibility in adapting to demand fluctuations. This means being able to add on or layoff workers, without greatly disturbing unit costs. As such when redesigning takes place, it will reduce the curvature of the employment function; that is, diminishing returns will be reduced. We can think of this as a progressive 'flattening' of the employment function. When this has reached the point where the marginal product curve has unitary elasticity, the proportional change in the real wage is just matched by that in employment, then the total wage bill is unaffected by the price changes following the change in I. If the total wage bill is unaffected, then, on the assumptions made earlier, the value of C will be unchanged.

This will be the case, for example, when the employment function takes the form: $Y = A(\ln N)$. Hence, I may fall, for example, but C will not

change. There will be no offset. So $d\Upsilon/dI = 1$. Any *further* reduction in the rate at which returns diminish will mean that the *change in employment will outweigh the change in the wage bill*, so C will move in the same direction as I. In this event, $d\Upsilon/dI > 1$ will always hold (Fig. 2.5) (Nell 1998a, 1992).

It can be argued that this was the conclusion that Keynes seems to have been seeking. In his Second Lecture in the Easter Term, 1932, Keynes reached '… the remarkable generalization that, in all ordinary circumstances, the volume of employment depends on the volume of investment, and that anything which increases or decreases the latter will increase or decrease the former' (Vol XXIX, p. 40. See also T. K. Rymes 1989, *Keynes's Lectures, 1932–5*, pp. 30–44).[23]

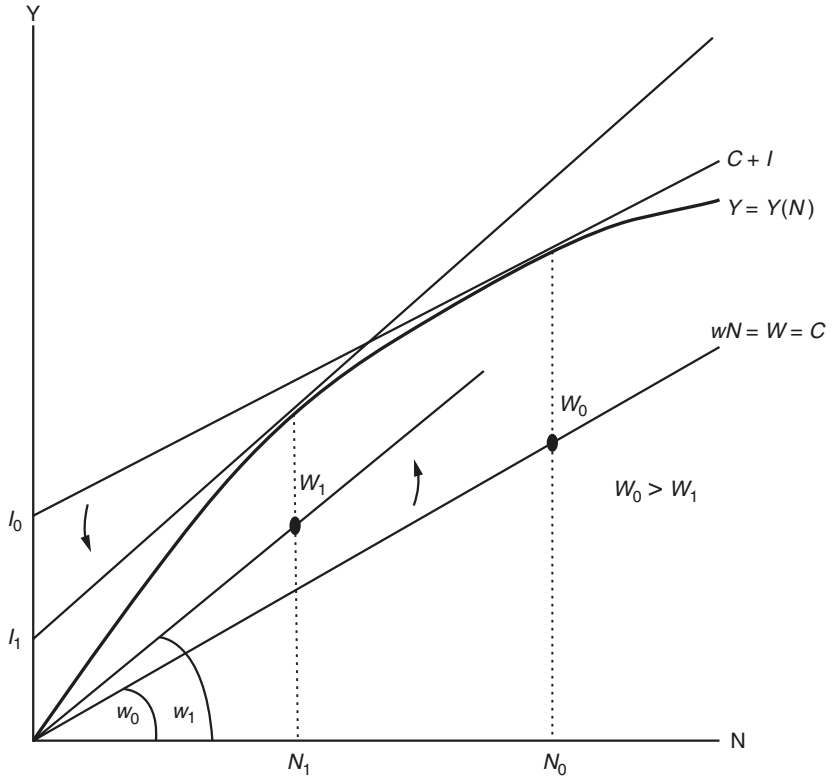

Fig. 2.5 Consumption moves with investment

We need to define the point of full employment—at which the entire labor force has jobs. An appropriate concept of full employment would be 'no vacancies' or, rather, 'no vacancies except turnover vacancies'. Employment is full when all farms, factories, offices, and shops have hired the employees they need to operate at their optimal level. Output at the point of full employment will be associated with a marginal product; that marginal product will become a real wage, which multiplied by the level of full employment defines the wage bill, equal, *ex hypothesis,* to consumption. The difference between full employment output and consumption must be filled by investment. Now, let investment fall below this full employment level. As it does, it will trace out the marginal product curve; at each lower level of investment, prices will fall, and the real wage rises, while employment falls; the overall effect on consumption will depend on the elasticity of the marginal product curve. But each point on the curve will be an *equilibrium*, in the sense that money wages and prices have adjusted to produce the profit-maximizing position (Fig. 2.6).

In short, so long as diminishing returns are significant, the price mechanism will lead Consumption to adjust so that it will tend to make up for a shortfall or offset an excess of Investment. It thus tends to stabilize demand around the normal level of output and employment.[24]

2.2.6 Adjustment to Demand Fluctuations in the Mass Production Economy

Modern economies appear to be subject to strong fluctuations in demand. Indeed, examples of market instability can be found everywhere, although the instability is usually bounded in some way. But there do not appear to be, in the modern world, strong and reliable market-based forces ensuring stability. Investment spending appears to be a major source of demand variation. Yet if the purpose of investment were simply a corrective, moving the actual capital/labor ratio to its optimal level, stabilization would hardly be needed. Such a long-run position would be stationary, or, if the labor force were growing, the economy would expand uniformly. This is the picture presented by neo-Classical theory, articulated, for example, by Hayek (2012 [1941]).

But both Keynes and the older Classicals, especially Ricardo and Marx, offer a different view: investment is the accumulation of capital, a process by which productive power is created, organized, and managed. It is driven by the desire for power and wealth, and there is no definable 'opti-

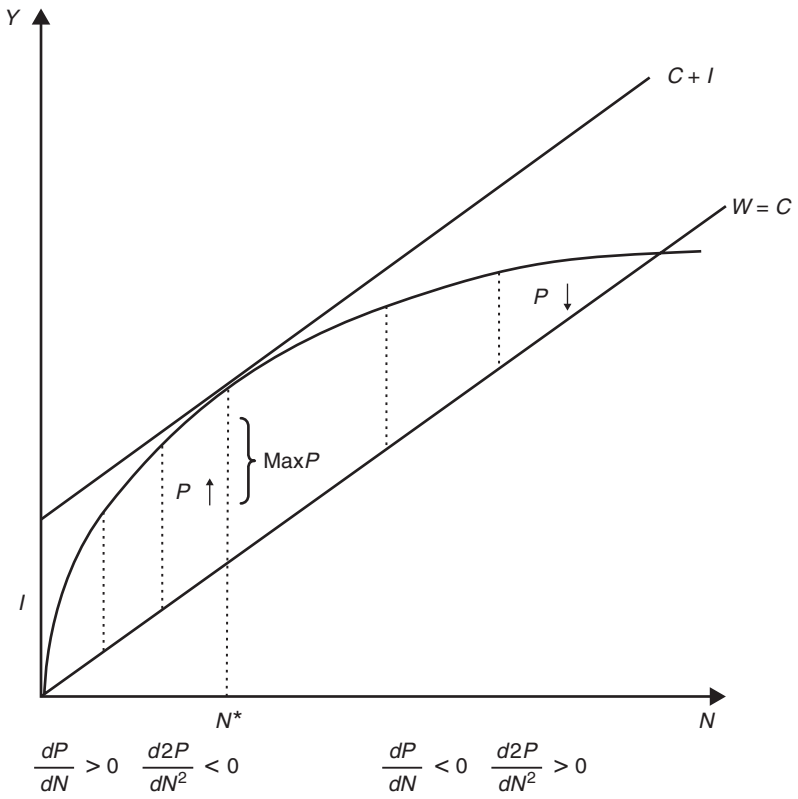

Fig. 2.6 Behavior of profits

mum'. Investment expands productive power, but it does not move the economy toward any definite destination. Given such motivation and the important role of technological innovation, the urge to invest will sometimes be strong and widespread, but at other times weak and uncertain. This may help to explain the need for stabilizing policies, resulting from the demand side.

In post-War Mass Production economies (Nell 1998a), prices do not play an important role in adjustment to changing demand. In Hicks' (1965) terms, this is a 'fixed price' economy. Employment is much more flexible, and constant returns appear to prevail in the short run; to put it differently, unit costs are broadly constant as employment and output vary over a wide but normal range. Prices can, therefore, be maintained at their

long-term levels, while permitting only small temporary variations around that level. Workers need to be semi-skilled, and teams can easily be broken up and re-formed; processes can be operated at varying levels of intensity in response to variations in demand, and they can easily be shut down and started up. It is likewise easy to layoff and recall workers.

As before, we have an aggregate utilization function: here the Mass Production economy will be characterized by a straight line rising from the origin, showing constant marginal returns in output to additional employment, that is, to more intensive utilization.[25] As a first approximation, Consumption can be identified with wages and salaries, while Investment can be taken as exogenous. As employment rises, the wage bill—and so Consumption spending—will rise at a constant rate, namely the normal wage rate. The wage bill—assumed equal to Consumption spending—is represented by a straight line rising to the right from the origin; its angle is the wage rate. Investment spending will be treated as exogenous in the short run, so will be marked off on the vertical axis. Aggregate demand will then be the line $C + I$, rising to the right from the I point on the vertical axis; its slope is the wage rate (Fig. 2.7).

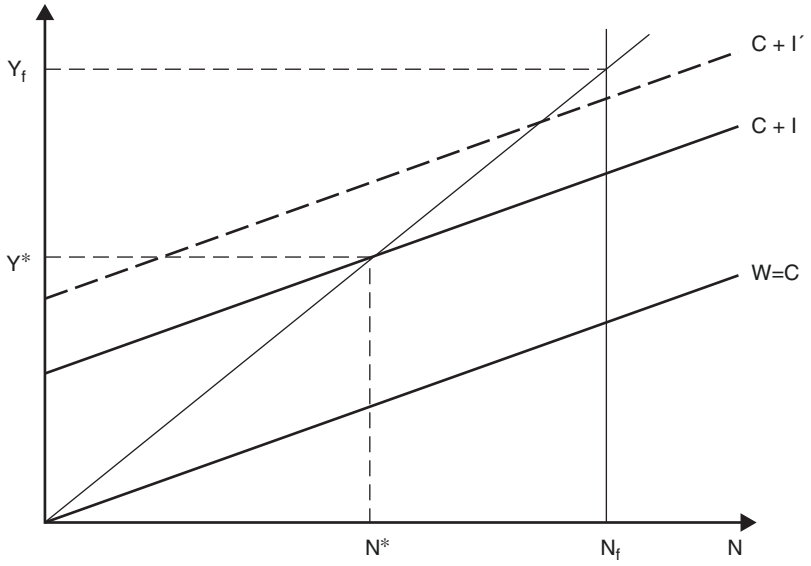

Fig. 2.7 Adjustment in the Mass Production economy

The origin, here and in later figures, is the point at which labor cost absorbs all outputs. Employment in such an economy will depend only on effective demand; there is no marginal productivity adjustment.[26] Output will increase with the amount of labor employed (capacity utilized), with a constant average productivity of labor; all and only wages will be spent on consumption, and all profits will be saved as retained earnings.[27] Investment can be taken as exogenous as a first approximation.[28] Expenditure is given by the $C + I$ line. (This ignores G, government spending, for the moment, although in the modern world, it will be much greater than in the earlier forms of the capitalist economy.) But the output function will be a straight line rising from the origin with a slope equal to the average productivity of labor—a. Suppose Investment is exceptionally high, then employment will be increased, and Consumption will also be exceptionally high. Conversely, if Investment is low, employment will be low, and thus so will be Consumption. Consumption adjusts in the same direction that Investment moves.[29] When investment rises, consumption, output, and employment also increase in a definite proportion.[30]

Simple as this is, it offers us with a number of powerful insights. Admittedly, they are derived on the basis of very great abstraction, so they cannot be expected to prove literally true—but they may, nevertheless, give us genuine insight into what will happen to the level of employment and output. For example:

- Investment and profits are equal here; this suggests that we should expect to find them closely correlated in practice—as we do (Nell 1998a, Chap. 7; Asimakopulos 1992).
- Investment determines profits here; investment is the driving force. We should expect to find something like this in reality—which many studies suggest we do.
- The multiplier here will equal $1/(1 - w/a)$, where w is the real wage, and a the average productivity of labor. That is, the multiplier will reflect the distribution of income and will not be very large. Again, this seems plausible.
- Real wages and the level of employment and output are *positively* related. This can be seen by drawing in a steeper wage line, with the same level of investment. The $C + I$ line will then also be steeper; so it will intersect the output line at a higher level of output and employment. In fact, most empirical studies of the post-war era do find real wages and employment to be positively related (Nell 1998b; Blanchard and Fischer 1989).

- Household savings *reduce* output, employment, and realized profits! (Obviously, qualifications are needed, and it must be remembered that this is a short-run analysis—but the long-run may never come! If this proposition seems hard to accept, think about Japan in the 1990s—and even recently.)
- Unemployment is indicated by marking off the level of full employment on the horizontal axis. It clearly results from deficiency in demand. That is, either investment is too low or wages are too low; which implies that unemployment can be reduced by increasing either.

Finally, money: let household savings increase with the rate of interest (as consumer durable spending declines), while business investment declines as the rate of interest rises (neither influence is likely to be very great). More precisely, when interest is relatively high, businesses are likely to curtail or postpone investment projects, and households may cut back on consumer durables. Thus, when interest is high, the investment line must shift down to a lower intercept, while the household consumption line will swing down, reducing its angle. When interest rates are relatively low, investment and household spending will be correspondingly higher. Thus, we can construct a downward-sloping function (an analogue to the traditional IS) relating the rate of interest, i, to employment, N (Fig. 2.8).

This function will intersect a horizontal line representing the level of the rate of interest as pegged by the Central Bank; this will determine the level of employment (Fig. 2.9).

There is no Classical dichotomy here; monetary and real factors interact. Yet—not so fast! In the Craft Economy, the interest rate tended to rise

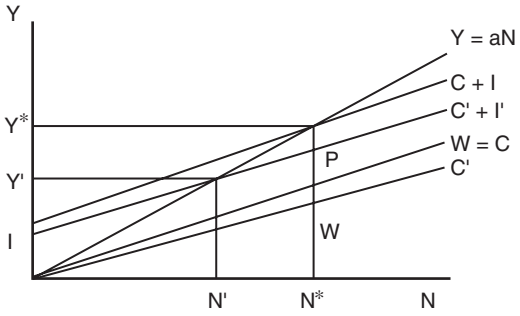

Fig. 2.8 Effects of interest on saving and investment

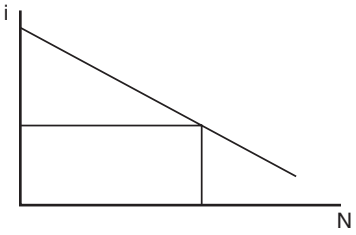

Fig. 2.9 The Central Bank's interest rate determines employment

and fall with the profit rate, moving pro-cyclically. What if we imposed that condition here? Then the structure of asset prices would have to adapt to the real conditions of profitability—this could well imply that the long rate would tend at times to move independently of the short. A form of the dichotomy might re-emerge, (Nell 1998a). But this is another story.

2.2.7 Growth and Prices in Mass Production

Once again, here is a model of short-term demand adjustment, based on investment spending, ready to be extended to growth. Of course, very early on Harrod and Domar did just that. The short-term adjustment pattern depends on investment spending in the context of a given capital stock, but the Keynesian analysis only considers the expenditure implications of investment. So to extend it to the long run, it seemed only necessary to take into account the capacity creation brought about by the investment spending.

The balance between investment spending and capacity creation could be taken for granted in 'replicative growth', because the growth simply reproduced the prevailing relationships. The level of I would generate the income necessary to employ the presently existing capacity of the economy, and it would create *new* capacity of an amount that would just be employed by *new* or increased I, dI, (a point very nicely developed by Domar). Balance between saving and investment and between new capital and expansion of the labor force will be brought about by the price mechanism. But that will not be possible in a 'fixed price' economy. And here is where a new form of unemployment emerges.

In fact, in the Mass Production economy, much of the growth will be the firm plowing back its profits in conditions where economies of scale exist, or, the firm will be innovating—that is, developing altogether new ways of producing its list of goods and services. But either of these will

imply changes in productivity, and also very likely in the skill requirements for the jobs the firm offers. This will not be a steady state, even if aggregate demand and capacity growth are in balance. To keep the economy on a growth path may well require active policy; no system of price adjustment will do this.

The Harrod and Domar models do not adequately explain growth. Indeed, what they show is that there is a level of I, the spending of which will generate a multiplier process that will employ the full capacity of the existing capital stock. We are familiar with this in modern conditions, with inflexible prices, but it also holds for the Craft Economy. With wages spent on consumption and profits invested, this can be expressed as

Aggregate Demand = Capacity Output, which is to say,
$I \times$ multiplier = $K \times$ productivity of K: $I/z = \Upsilon/v$
But with all firms operating at the optimal point, the multiplier,
$1/z$, equals Υ/P, and $v = \Upsilon/K$, so
$I(\Upsilon/P) = K(\Upsilon/K) \rightarrow I/P = 1$, that is, $I = P$.
Next, consider what happens when
$I/z > K/v$.

This will tend, in Craft conditions, to drive up prices relative to money wages, so P will tend to rise; the multiplier will thus fall. When $I/z < K/v$, prices will fall and the multiplier rises. The position is stable.

Of course, the above also implies that $I/K = z/v$, where z and v are defined for the optimal level of operation. When $I = K(z/v)$, the level of demand will fully employ the available capacity; moreover, z/v will define the growth in I at which the demand generated by the multiplier (applied to the increase in I) will just balance the new capacity the investment creates, thus maintaining full utilization as the economy expands (Domar 1987).

But when the shift to Mass Production takes place, these relationships change in important ways. First, z and v are no longer defined for the unique optimal level of operation. They hold for the full range of constant variable costs. And since there are no longer price adjustments, the position is no longer stable. That is, both the level of I and the growth in I tend to be unstable in the sense that small variations in I will send a signal calling for a quantity adjustment in the wrong direction.

In any case, this still leaves open the question of what determined the level of I in the first place: it does not explain why firms should wish to expand their capacity, nor does it help to account for the prices they will

propose to charge for their new output. Nor does the Harrod-Domar approach provide insight into the real wage, or the productivity of the new investments.

Insight into why firms expand requires going beyond the Harrod-Domar framework, which deals only with *investment spending*, to look into planning for growth. There is a considerable literature on this; investment plans and long-run prices tend to be determined together, along with the choice of technology, including product design. Very broadly, firms will want to expand if they see their markets are expanding; they build new capacity in response to the expectation of growth in demand, which may be stimulated by better products, or by lower costs and prices. The growth of markets, in general, will be greater or faster the lower prices are. This is similar to the accelerator, but here it is combined with considerations of price. (Nell 1998a).

To determine the *plans* for growth, as opposed to current *spending* on growth, *two* equations are needed because, in general, growth and prices will be determined together: one equation will show the growth of demand as a function of prices, the other the growth of supply, also depending on prices. According to the first equation, higher prices will mean a lower rate of growth of demand, and lower prices a higher. High prices will make it harder to break into or develop new markets, low prices will make it easier. According to the second, higher prices will provide the funds that will finance investment for a higher rate of growth. (Nell 1998a, Chaps. 10 and 11). These can be solved for planned prices and growth (being forward-looking, of course, these equations are subject to a great deal of uncertainty and are thus liable to frequent revisions).

To spell this out adequately would take us far afield. Given reasonable assumptions, these equations can be shown to have a unique positive solution, stable by normal criteria (Nell 1998a). But this will not be a 'long-term equilibrium'; it certainly does not exhibit a tendency to full employment—quite the contrary. Nor can it really be stable; demand is growing because families are trying to improve themselves. They are changing their patterns of spending, and they are innovating and so are businesses. This is not a steady growth; the economy is transforming itself, and many interesting dynamic patterns can be explored. Jobs are eliminated and new ones created—but nothing ensures a balance between these processes (an especially interesting dynamic pattern is the tracing out of the sigmoid relationship as Investment shifts the wage-accumulation curve; this will provide a picture of the business cycle).

So it is clear that growth in these conditions will no longer necessarily exhibit the golden rule in equilibrium, nor will it tend to be stable. Indeed, equilibrium may be very difficult to define in these conditions, given that innovation and productivity increases are ubiquitous. Instead, economic analysis should perhaps look to determine the direction, speed, and extent of economic change.

2.2.8 Summing up and Moving on

Growth should be considered a market-driven process, especially by those in the neo-Classical tradition; but the Solow-Swan model—more or less the neo-Classical standard—does not contain a price mechanism, in spite of assuming diminishing returns and requiring that the marginal conditions will be met. It is not capable of analyzing unemployment—it starts by assuming the problem away. However, a model of 'replicative growth', based on historical conditions, can be developed that shows growth being driven initially by a stabilizing price mechanism that tends toward optimal positions. This has a neo-Classical flavor, but the system puts excessive pressure on profits, which will lead firms to innovate to gain greater control over their costs. Such innovation will lead to a new flatter production function, with a different structure of costs, which, in turn, brings about a different pattern of adjustment. And this new system—Mass Production—generates Keynesian unemployment, which can only be corrected by government policy.

This is the result of 'Transformational Growth'.[31] The new system has constant costs and no marginal productivity conditions; in the short run, prices tend to be fixed, reflecting the constancy of costs and the flexibility of employment, so adjustment takes place through the multiplier-accelerator. When demand is sluggish, unemployment will emerge, with no tendency to self-correction. Growth comes about through investment that may be 'extensive'—new plant and equipment, new facilities and new projects—or 'intensive', that is, plowing back profits into the reorganization and reconstruction of present facilities.[32] But whichever it is, the plan for growth has to be developed in conjunction with plans for prices, since the expected growth of the market will depend in part on the anticipated prices.[33]

But the macro models discussed so far have a serious shortcoming. They sum up the entire financial system in a single variable, *the* rate of interest, *i*, which is then implausibly introduced as a major determinant

of investment and partial determinant of consumption. This, in turn, is seen as the major connection between the financial system and the real economy. In fact, summarizing a lot of Keynesian and post-Keynesian research, there are many rates of interest, they do not always move together, none are major determinants of investment, though they are sometimes an important influence (and on durable consumption as well), and the connections between the real and financial sides of the economy are more subtle and more complex (Nell, 2009). We can do much better than that.

2.3 Economic Development, Uncertainty, and Insecurity

It is not just unemployment that is so damaging—it is unemployment in the context of creative destruction, where the destruction of traditional society is thorough, but the creative aspect has not yet brought about a new way of life, at least not one that has a place for everyone. And, in particular, the modern Mass Production system (and, even more, the Information Economy) fails to absorb displaced labor—the market not only offers no help but provides incentives to substitute for labor. The contemporary way of life is riddled with uncertainty, and gives rise to widespread anger and anxiety. Keynesian unemployment develops on top of displacement from agriculture and rural life, and is augmented by technological unemployment—adding to the humiliations of not being able to support a family and the difficulties of navigating in the new world of city life.

Economic development is a process of 'transformational growth'; it is never smooth or painless. Traditional patterns of production and distribution rest on time-honored customs, with skills and activities—farming, crafts, and trade—passed down from generation to generation. What people will do or be in their lives, and how they should behave, is largely fixed by accident of birth. There is little uncertainty about the direction of life; there are choices to be made, sometimes agonizing ones, but they are not clouded by uncertainty—what is supposed to happen is known. Problems arise not because we have no idea what to do, or because we have to gamble on what might happen, but because our commitments or priorities are in conflict. A Capulet has fallen in love with a Montague; the King is evil but competent, to remove him will cause civil war. Of course, the weather is uncertain, so the harvest cannot be predicted. But that is not a

matter over which there is control. By contrast, what people do and how they should live, whom they should respect and obey, is not in question.

It is just these certainties that are thrown into upheaval by the pressure of markets and development. Old ways are destroyed by competition; new methods are introduced—old skills are no longer required, new ones have to be learned. Virtually all aspects of the society are affected; in many cases, dramatically. There will be winners and losers, and sometimes, for long stretches, more losers than winners. In the end, no doubt, if the development is successful, everyone will be better off, but it may take a long time to get to the end—and some groups may never make it.

Markets introduce uncertainty, and uncertainty gives rise to insecurity. Markets also directly create insecurity. Uncertainty arises because no one can predict with assurance which firms or which products or technologies will win out in competition. And where will new markets arise? Who will capture control of them? Which kind of assets will prove the most valuable, the most enduring? Economic development means that everything becomes 'monetized', can be bought and sold for money.

This can be a very big change in a traditional society. The family makes a living; it does not think of itself as 'having a business'. But once the system becomes market-driven capitalism, all forms of economic activity will be treated in law and in the markets as businesses that can be bought and sold. Yet this is not a simple matter. Textbooks will explain (as the Merchant of Prato knew in the fifteenth century) that the price of a business is the capitalized value of the stream of income it generates. But for most people, this is not intuitively obvious, and even if it is understandable, it will not be easy to calculate. (It took accountants centuries to develop methods of calculating capital values—and there are still unresolved issues.) But miscalculation can lead to losses and before they know it a family's traditional source of livelihood may be gone. This directly gives rise to insecurity. Both uncertainty and insecurity lead to feelings of powerlessness, and loss of control; as we shall see, both are sources of anger and resentment directed against modernization and development.

For Keynes, the market's tendency to create uncertainty and insecurity was central to understanding it; by contrast, modern economics, emphasizing rational choice, has tended to lose sight of the extent to which markets and competition create widespread uncertainty, especially in contrast to traditional societies, which, of course, were plagued by a different kind of uncertainty—that regarding weather and the harvest. Indeed, Keynes regarded money and monetary instruments as having developed to

enable businesses and households to cope better with uncertainty—some incomes would be reliable because fixed by contract, money itself would be unaffected by the kinds of speculation that would affect other asset prices, and so on. Of course, there will remain a residue of uncertainty—contracts can be broken during bankruptcies and inflation can erode the value of money. But the courts provide protection, and Keynes and the Keynesians proposed that governments institute policies to reduce uncertainty, and to provide protection against insecurity. Again, by contrast, the 'Washington Consensus' has held that governments should set the rules and then keep out of the markets. Market-driven development will then create both uncertainty and insecurity.

2.3.1 The Logic of Capital

These changes come in a package; they are not accidental or wholly contingent. True, there is no necessity about development; it may not happen—although market pressures are hard to resist. And development may not be capitalist—although non-capitalist development has shown a tendency to turn into capitalism. But if economic development is taking place along capitalist lines, then these are the consequences, intensified by the pressures of globalization. Development means changes in institutions, laws, and practices with regard to work and business; it is not just 'more investment', 'raising productivity', or some vague activity of "modernizing". It means reorganizing work and business along capitalist lines, separating business from the family, public from private, setting a new system into place. Everything becomes fungible, money replaces barter, work has to be productive, competition becomes ubiquitous, and all activity is oriented toward the future—the value of the business is the discounted stream of expected future returns! Sunk costs are sunk—the past has no relevance! These points are part of the logic of the system.

Businesses organized along capitalistic lines cannot be dominated by family considerations. Nor can they respect tradition if it gets too much in the way of profits—otherwise, they will lose out to competitors. And they have to think about the future, about investment, about the search for new markets, and about new products. These are consequences of the logic of capital, part of what is needed to release or enhance the productivity of capital.

To repeat, then: the movement from rural to urban, from traditional agriculture to modern industry, is set in motion by capitalist development,

and is a central feature of the emergence of the modern world. But it rips apart the fabric of traditional life, creating uncertainty, while rendering many traditional skills, and a great deal of knowledge, obsolete. It creates a new world, where the traditional morals and manners may no longer be appropriate. But not only will the new world generally not absorb all those displaced from the old, it will itself discard the moderately stabilizing market mechanisms of the older Craft-based capitalism, and, moving into mass production (and later the information economy), come to work in a new and more unstable way. This long-term pattern of development provides, perhaps, the basic perspective for understanding unemployment in the modern era.

Notes

1. It has been suggested, however, that today's globalization-driven growth lifts all yachts.
2. In actual societies, some of these features will be stronger and more evident, and others weaker. Actual societies will also contain elements or sectors moving toward modernization—and others trying to revitalize (thereby changing) the old traditions.
3. A good example: The American Midwest, which saw the growth of family farming and small-town communities all through the late nineteenth century. But as mechanization proceeded, population began to move to the cities. This was intensified by an agricultural crisis following World War I; recovery was weak, followed by the system sinking into catastrophe during the Great Depression; in the late 1930s, it was rescued in part by the New Deal, and then strongly boosted by World War II. A brief collapse in the late 1940s was overcome by the Korean War, only to fall into a pattern of long-term land consolidation—monopoly farming—leading to a death spiral for the family farmer and the small town in the last decades of the twentieth century.
4. The position of the traditional rural society on the verge of development can be seen as a dilemma, for both the top and the bottom of society. On the one hand, the traditional dominant classes do not wish to give up power; on the other, they cannot compete in the global economy on the basis of their current position. For the weaker and poorer classes, in their present position, they are (usually) severely exploited by landlords and moneylenders; development may sweep these away, but the productivity improvements that bring this about will also force much of the weaker peasantry out of the countryside.

5. Moreover, even staying within the framework of individual decision-making, the approach is seriously flawed, for there are *two* decisions, not one, involved, and each decision is a complex one involving one or more subsidiary decisions. The first is the decision WHETHER to leave the rural area, and thus to leave traditional occupations. The second is the decision WHERE to go, and along with that, WHAT KIND of work to seek. The first acknowledges that the opportunities available in the rural area are not adequate; the second is a response to (incomplete and unreliable) information about opportunities elsewhere. The two sets of decisions should not be conflated; sometimes, they may be taken together, but very often they will be separate in time and place and based on different factors. In particular, the second decision may be concerned not only with opportunities for advancement, but it may be motivated by the immediate goal of earning cash that can be sent home in remittances. A dead-end job that offers immediate cash may be preferred to an open-ended job with good possibilities of eventual advance, but low or insecure pay now.
6. Of course, sometimes labor is forced out of domestic agriculture by cheap imports from industrial farming in the advanced world. This has happened in Mexico recently.
7. There is a deep issue here. Economists typically model consumption as constrained by income and prices: households choose the best combination of goods and services they can afford, given their incomes and the prices on the market. But there is another constraint that becomes progressively more important as societies become richer, and that is time. Consumption is time-consuming and often takes energy as well. Think of preparing food, caring for our clothes, playing games, reading books, and surfing the Internet. Our choices of what to consume must each leave time for the enjoyment of the others; hence, we move to fast foods, permanent press clothes, high-speed computers, and so on. Even more important, consumption and leisure-time activities must also leave time for learning and self-improvement.
8. There are also questions about the quality of work: not only whether it is dangerous but also whether it is fulfilling, or whether it allows workers to develop abilities or express themselves. Is the place of work, the place in which workers spend most of their waking hours, pleasant, or is it depressing?
9. Fundamentalism may become a self-sustaining dynamic. By preventing governments from reducing uncertainty and managing the insecurity that arises from development, fundamentalist movements may actually strengthen their own position. For the increased uncertainty and insecurity gives rise to a traditionalist backlash, which can be used to block the development of modern education, infrastructure, and public health. Education

and social welfare can then be channeled into traditional institutions—which, however, will offer little help in coming to terms with the problems of modernization. So insecurity and uncertainty will not be mitigated; they and the frustration they engender may actually increase—leading to even more fertile ground for fundamentalism. In addition, holding the line on the traditional subordinate position of women will tend to keep the birth rate high, with traditional families staying poor.

10. Early capitalism, through the nineteenth century, appears to have had a weak built-in automatic stabilizer in a 'price mechanism', which depended on technological inflexibility, and moved counter-cyclically, in tandem with the monetary system. This was swept away with the advent of mass production, and replaced by a volatile pattern of adjustment, in the multiplier augmented by the accelerator (or capital-stock adjustment process), so that the system came to rely on government for stabilization. This has been explored on behalf of six countries, the US, the UK, Canada, Germany, Japan, and Argentina, in which adjustment during the period 1870–1914 is contrasted with that in 1950–1990. Evidence of a weakly stabilizing price mechanism is found in all six in the early period; the transition to a multiplier-based adjustment is apparent in all but Argentina, which did not seem to fully accomplish the transition to a modern economy during the period studied. For further details, see Nell (ed.) (1998b). In this edited volume, Nell brings together 13 theoretical and empirical papers which attempt to outline the general theory of transformational growth and its applicability. For a further account and analysis of these diagrams and equations, in the service of a very different line of argument—the instability of the financial system—see my forthcoming book on Henry George for the 21st C, *Progress and Poverty in Economics*.
11. This is a short-run relationship in which given plant and equipment is operated with more or less labor. Marshall and Pigou arguably operated with such a conception, (Hicks 1989). A 'true' production function, (Hicks 1963) would require changing the technique when the amount of labor per unit capital varied. This is not a viable conception, as the 'capital controversies' showed (Kurz and Salvadori 1995; Laibman and Nell 1977).
12. In post-War Mass Production (Nell 1988, 1998a), by contrast, constant returns prevail in the short run; to put it differently, unit costs are broadly constant. Workers need only be semi-skilled, and teams can easily be broken up and re-formed; processes can be operated at varying levels of intensity in response to variations in demand, and they can easily be shut down and started up. It is likewise easy to layoff and recall workers. The widespread existence of constant unit costs came to light beginning with the debate on prices and pricing in the 1930s and 1940s, (cf. Hall and Hitch 1939; Andrews 1949). The suggestion here is that constant costs were the result of technological developments in manufacturing processes (Hunter 1979).

The evidence for constant costs is summarized and discussed in Lavoie 1994, Chap. 3. Under constant costs, of course, the real wage will not be governed by marginal productivity.

13. To move from individual firms to the aggregate, it is not necessary to hold the composition of output constant, so long as the movements are small. In both Craft and Mass Production, the adjustment is better shown in two sectors. The aggregate function oversimplifies. When proportions of capital to consumer goods change in the Craft world, prices change; when they change in Mass Production the degree of utilization changes, but unit costs and prices are not affected.
14. The Penn World Tables provide data making it possible to plot output per head against capital per head with a large number of observations. When this is done for the advanced Organisation for Economic Co-operation and Development (OECD) economies, the scatter diagram shows no evidence of curvature. The same plot for the backward economies exhibits pronounced curvature, for middle-range economies' moderate curvature. Of course, this can be considered no more than suggestive.
15. Wages and salaries in the aggregate are closely correlated with Consumption spending, but they do not fully explain it. Some obvious adjustments are easily made. Consumer spending also depends on the terms and availability of consumer credit. In addition, it reflects transfer payments. Wealth and profitability are significant variables. But for the present purposes, which are purely illustrative, a simple 'absolute income' theory will suffice.
16. This, of course, directly contradicts one of Modigliani's most celebrated contributions, the life-cycle hypothesis. But half a century of empirical evidence has shown that in the US (and other advanced countries), household consumption spending tracks wage and salary income 'too closely' for any simple version of the life-cycle hypothesis to be correct (Deaton 1992).
17. Nothing is implied in this discussion about the marginal product of capital. Here, capital is given in amount and fixed in form; when we come to growth, we will consider the capacity-creating aspect of investment.
18. This has features in common with 'overlapping generations' models, but it should be clear that a number of fundamental assumptions are different. For one thing, Keynesian uncertainty is assumed to be present here; so neither firms nor households can have anything like 'perfect foresight'. Saving does not depend here on a 'utility-maximizing' calculation, comparing consumption today with consumption tomorrow. Nor are there any general assumptions about time-preference, assumptions which are notoriously difficult to justify. Saving here is assumed to follow simple rules that can be expected to yield desirable results even in the face of great uncertainty. Moreover, patterns of saving and spending differ not by age, but by class or function. Workers and managers will tend heavily to consume, and capitalists will want to maintain their holdings—in extreme form, these become no saving

out of worker/manager income over their lifetime, no consumption out of capital income, and capital will be passed along intact. By contrast in the overlapping generations' models, all old workers tend to consume everything, while only the young save. But, of course, the main difference is that in the standard overlapping generations' model, saving determines investment. (For a survey, see De la Croix and Michel 2002, Chap. 1)

19. In the less likely case that established wages were also to be lowered by a rise in the growth of labor, it might be thought that this would increase the profits of existing firms, raising savings, which would tend to lower interest rates, also encouraging investment. But if established wages were lowered, consumption would fall, reducing revenues; so realized profit would *not* increase.
20. 'There are four prices involved in the system: (1) the selling price of a unit of real output (and since real output also serves as capital this is the transfer price of a unit of capital stock) $p(t)$….[he goes on to define the money wage rate, the money rental per unit time of a unit of capital, and the rate of interest]…we can eliminate [the price of output] immediately. In the real system we are working with there is nothing to determine the absolute price level. Hence we can take $p(t)$, the price of real output, as given. Sometimes it will be convenient to imagine p as constant' p. 79. He then introduces the marginal productivity conditions [his equations 10 and 11]; when the price of output is taken as given, then when the capital/labor ratio is determined, the marginal productivity equations will determine the nominal wage and the rate of return to capital. But this is completely passive; there is no adjustment mechanism here.
21. The first figure shows the tangency growth equilibrium; the second shows the adjustment to a rise in the growth rate—the real wage falls; the third shows the adjustment when aggregate demand is too low—the real wage rises.
22. We assume that an appropriate portion of bank capital is invested in reserves of the sort required to back issues of notes or loans. Thus, expansion of bank capital at the long-run equilibrium rate will automatically provide expanded reserves.
23. The 'Manifesto' written by Joan Robinson and Richard Kahn, with the concurrence of Austin Robinson, challenged not the result, but aspects of the reasoning. As noted above, part of their discussion concerned the effects of price changes on demand. Rymes observes, 'The "manifesto" claimed that the case of no increase in the demand for consumption goods [following an increase in investment spending] was the one exceptional case Keynes had dealt with … It is … an obviously special case'. On the assumptions here, it is the case where *the elasticity of the marginal product curve is unitary*. Both Keynes and the 'manifesto' authors considered the 'elasticity of supply' to be a determining factor, but neither presented a

general analysis of the way changes in I led to corresponding changes in C. The present argument shows precisely why the 'obviously special case' is of paramount importance: it is the cutoff point below which changes in C offset change in I, above which we have a multiplier.

24. This form of adjustment brings to mind the doctrine of 'forced saving' (Thornton 1802; Hayek 1932). Here, however, the price changes are assumed to reflect changes in demand pressure—not necessarily connected to changes in the quantity of money -and are shown to result in a Marshallian 'marginal productivity' equilibrium. The traditional 'forced saving' discussion usually started from an assumed increase in the money issue or in an exceptional extension of credit, and, indeed, a rise in demand of the kind considered here would require just such additional finance—which the resulting rise in prices relative to money wages would tend to support. (The higher profits will allow banks to charge higher interest rates, enabling them to attract additional reserves. The higher interest rates, however, should tend to dampen further expansion.)
25. Neo-Classical production functions have frequently been 'fitted' to data from modern Mass Production economies, often in connection with the Solow-growth model, in spite of the evident presence of constant costs. This usually involves a sophisticated but disastrous mistake; what is actually being captured is the income distribution identity, cf. the Symposium in the Eastern Economic Journal.
26. That is, employment is *not* determined in the labor market. It follows directly from the demand for output, given the output-employment function—as in Kalecki. Hicks, following Keynes, initially modeled effective demand by setting up the IS-LM system together with a labor market and a conventional production function. Later, he came to feel that this was a mistake (Hicks 1976a, 1989). But if returns are constant and there is no marginal productivity adjustment, the markup must be explained (Rima 2003).
27. Even in the US, changes in employment do not follow changes in output strictly according to the labor actually needed; there is labor hoarding, as studies of Okun's Law show.
28. On these assumptions, Investment determines—and equals—realized Profits. When households save a certain percentage out of wages and salaries the Consumption line will swing below the Wages line—Profits will be reduced. When wealth-owning households (or businesses subsidizing top managers) add to their consumption spending in proportion to the level of activity, this swings the C + I line upwards, increasing Profits.
29. The output multiplier in this simple example will be $1/(1 - (w/p * n)$, where w/p is the real wage and n is labor per unit of output.

30. This is the point that Keynes wrestled with; it shows up in a very simple form here.
31. Empirically, we might examine the vectors of sectoral outputs, class income payments; if there is equilibrium steady growth, then first differencing will eliminate the growth rate, g, and the result will be a random walk. But if growth is not steady, outputs and incomes will not be a random walk; if the bias is pronounced and persistent, it will be an indication of transformational growth.
32. At low levels of investment, the disruption to a firm of having to halt spending on an investment project may not be very great. But larger projects will involve more of a firm's management and affect more of its current operations; a break will therefore disrupt a larger *proportion* of the firm's activity. An example: the impact on the firm rises linearly with I (100, 200, 300, 400), but the proportion of the firm's activity affected also rises linearly (10 percent, 20 percent, 30 percent, 40 percent). Then at higher levels of *I* the cost of disruption will increase more than proportionally: 10, 40, 90, and160.
33. But the macro models discussed so far have a serious shortcoming. They sum up the entire financial system in a single variable, *the* rate of interest, *i*, which is then implausibly introduced as a major determinant of investment and partial determinant of consumption. This, in turn, is seen as the major connection between the financial system and the real economy. In fact, summarizing a lot of Keynesian and post-Keynesian research, there are many rates of interest, they do not always move together, none are major determinants of investment, though they are sometimes an important influence (and on durable consumption as well), and the connections between the real and financial sides of the economy are more subtle and more complex (Nell 2009). We can do much better than that.

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CHAPTER 3

The Job Guarantee and Transformational Degrowth

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3.1 Introduction

Traditional Keynesian and Post-Keynesian policies provide useful tools for addressing many of the inherent social and economic flaws of capitalism such as involuntary unemployment, poverty and inequality. However, these policies fail to account for environmental limits. As such, the solutions they offer all rely on increasing aggregate demand, stimulating higher levels of economic growth and throughput. By contrast, a job guarantee (JG) program embodies special features that dissolve the contradiction between employment and the environment: between economic and ecological prosperity.

This chapter explores these special features and argues that the JG can be used to pursue the social and environmental aims of degrowth.[1] The first section examines Keynes's diagnosis of and solution to the problem of unemployment in terms of effective demand. It is shown that the principle of effective demand has important and paradoxical implications for economic growth and the environment. The next section builds on Marx, Veblen and Keynes's insight regarding the central role of money in

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a capitalist economy. It is argued that monetary production (M–C–M′) is not only the root cause of unemployment but also the driving force behind the existing ecological crisis. The third section compares the JG and alternative paths to full employment in terms of their environmental implications. The final section considers how a JG program may be modified to slow down the economy while maintaining full employment.

3.2 Effective Demand: The Link Between Jobs and Growth

Keynes's (1936) theory of effective demand diagnosed the problem of involuntary unemployment in capitalist economies. According to Keynes, the volume of output and employment is determined by the sum of consumption and investment demand. Because people tend to save a portion of their income, there is a gap between consumption demand and income (output). In order to achieve full employment then, investment demand must fill the gap at the full employment level of output. However, there is no mechanism to ensure that investment demand will fill the gap because investment decisions are based on expected future profits in a world characterized by fundamental uncertainty. The normal situation for a capitalist economy is one where investment falls short of what is required to bring about full employment.

Keynes's explanation of effective demand was confined to the short-run. When Domar (1946, 1947) extended Keynes's analysis into the long-run, he found that the problem of effective demand was made worse. The reason is that the same investment needed to fill the gap between income and consumption also increases productive capacity. As the volume of output expands, following each increment of investment, so too does the absolute size of the gap between income and consumption. As the gap grows, successively more investment is needed to fill it. But each additional increment of investment only further widens the gap. Consequently, "the economy finds itself in a serious dilemma: if sufficient investment is not forthcoming today, unemployment will be here today. But if enough is invested today, still more will be required tomorrow" (Domar 1947, p. 49). Finally, as the demand gap expands, excess capacity puts downward pressure on profit expectations. The result is that just when a higher volume of investment is required, the inducement to invest is weakened.

Boulding's (1945) bathtub theorem can be used to shed light on this paradoxical result. The bathtub theorem is particularly insightful because it is stated in real (physical) terms: $\boldsymbol{A = P - C}$. The rate of accumulation is equal to the rate of production minus the rate of consumption: where A is the rate of accumulation, P is the flow of production (addition to capital stock) and C is the flow of consumption (destruction of the capital stock).[2] Boulding uses the analogy of a bathtub to explain the model. Production represents the flow of water into the tub. Consumption represents the flow of water down the drain. The volume of water in the tub represents the capital stock, and the difference between the flow of production and consumption is the rate of accumulation.[3]

According to Boulding, the bathtub theorem is the "first step in understanding long-run crises of capitalism—deflationary pressures of a mature society and its intractable unemployment" (1945, p. 3). Unemployment occurs because the economy has an institutionally limited capacity to absorb the stock of accumulated assets. When the growth of the stock exceeds the level desired by capitalists, the rate of accumulation (the difference between production and consumption) must fall. This can happen in one of two ways: (1) the rate of production must decrease and (2) the rate of consumption must increase.

The first case—a decrease in production—is brought about by falling profit expectations and results in involuntary unemployment. As Boulding puts it, "in a situation where the owners of the stock pile are unwilling to increase their holdings, in the absence of an increase in consumption, employment and production must decline until the difference between production and consumption is equal the rate of accumulation which capitalists are willing to allow. This … in a nutshell is the main Keynesian contribution to economic thought" (1945, p. 3). The alternative—an increase in consumption—is unlikely to occur unless the government intervenes which is the traditional Keynesian solution. In light of the Domar problem, ever-increasing government spending is required to maintain full employment in the long-run (Vatter and Walker 1989, 1997; Wray 2007).

Boulding's analysis helps to illuminate the paradox of effective demand precisely because it is stated in physical terms. What it demonstrates is that crises occur when the system becomes *too productive*. In other words, when we produce too much, profit expectations fall off, investment declines and the result is rising unemployment, poverty and misery. The paradox is clear: people suffer not because we do not produce enough, but

rather because we already produce too much, or alternatively, because we do not destroy (consume) output fast enough.

To avoid a crisis of involuntary unemployment in the long-run, Domar demonstrates the net investment in each period must be larger than in the previous period. But investment expands productive capacity. Therefore, to avoid becoming too productive, society must always expand production. In other words, to avoid unemployment, a capitalist economy must grow at an exponential rate. As Dillard puts it, "employment in investment activity helps to maintain demand for the consumption output of existing facilities. In order to make full use of the factories already in existence, we must always build new factories. Otherwise, in our society with its characteristic widespread inequality of income, there will not be enough money spent to keep the old factories going. If investment falls off, unemployment results" (1948, p. 8).

3.3 A Common Cause: Unemployment and Ecological Crisis

In order to address the problems of unemployment and ecological crises, it is necessary to understand their root causes. Marx (1860), Veblen (1904) and Keynes (1936) all identified the root of the economic problem in the institution of production for a profit or more simply monetary production (Dillard 1980, 1987). This section explains how and why the causes of the current ecological crisis can be traced to the same source.

The fundamental link between unemployment and ecological crisis is overproduction.[4] And, overproduction as noted by Marx and Keynes, in particular, is a monetary phenomenon. Classical theorists denied the possibility of overproduction on the basis of Say's Law: supply creates its own demand. However, as Marx points out, Say's Law only holds in the context of a barter (i.e. non-monetary) economy. In a situation where individual producers exchange commodities for commodities (C–C′), supply literally is demand. If money is introduced as a medium of exchange (C–M–C′), the identity of supply and demand is broken and the possibility of a crisis of overproduction or insufficient aggregate demand emerges (Marx 1860).

In a capitalist economy, the potential for crisis is inevitably realized because money is both the starting point and aim of production (M–C–M′). The purpose of production is no longer use value (C′), but rather

money profits (M′). Capitalists own the means of production and therefore control production decisions. They must be willing to throw money into circulation to hire workers and purchase raw materials if production is to take place. On the other hand, workers own nothing but their labor power and remain at the mercy of capitalists. Whether or not social needs are being met, workers cannot set production in motion. What is required is the belief on the part of capitalists that they will be able to realize profits through the future sale of output. If capitalists' expectations are grim, they can deny workers access to the means of production, and the result is involuntary unemployment.

Unemployment is the most obvious social contradiction of monetary production. In a society in which production is geared toward profits (exchange value) and not needs (use value), the satisfaction of needs becomes a curse. Indeed, in a capitalist economy, meeting needs is merely a byproduct of making money profits. And when the system is too productive, profit expectations fall off, resulting in poverty amid plenty. This explains why massive quantities of resources are channeled into the wasteful industry of need production (i.e. marketing and advertising), even as the basic needs of large portions of the population remain unmet.

It should come as no surprise that an economic system that operates without regard to human needs fares no better when it comes to respecting environmental limits. If we ask why people who want to work are denied employment, the answer is simple. It is not profitable to employ them. If we ask why the destruction of the planet continues unchecked, the answer is likewise that it is not profitable to stop. So long as production aims at the endless accumulation of money profits, the environment remains in serious peril (Blauwolf 2012; Foster 1999; Harvery 2010; Klein 2014; Kovel 2002; Magdoff and Foster 2011; Smith 2010, 2011).

So, why must a capitalist economy always grow? The answer is not that we are failing to produce enough output to meet basic human needs. For example, US GDP per capita in 2013 was over US$53,000.[5] Rather, the economy must grow so that capitalists can realize profits and workers can secure jobs.

The relationship between profits and employment reflects the fundamental conflict between workers and capitalists in a system of monetary production. Economic growth is not directly in the interest of the majority of the population—at least not in the industrialized North.[6] Indeed, beyond environmental limits, growth is a threat to everyone's well-being.

For the working class, growth is desirable only indirectly insofar, as it supports the security of employment. On the other hand, growth is the raison d'etre of the capitalist class. As Marx puts it, "Use value must therefore never be looked upon as the real aim of the capitalist; neither must the profit on any single transaction. The restless never-ending process of profit-making alone is what [capitalists] aim at" (Marx 1867, p. 130). This is the basic condition of monetary production and the key to understanding both unemployment and ecological crisis.

Although the theory of effective demand emerges from an analysis of the short-run, Keynes identifies the basic relationships between profits, employment and growth. In a monetary economy, the level of employment depends primarily on the volume of investment; investment is a function of profit expectations; and profits in the aggregate will only be realized if investment is sufficient to ensure that the economy is growing.[7] If the economy stops growing, involuntary unemployment rises. To solve the problem of unemployment then, the government must ensure that aggregate demand is always sufficient to maintain economic growth.

Keynes's diagnosis of the problem of unemployment in terms of money paved the way for its solution. However, the environmental problems associated with monetary production remain to be addressed. Full employment if achieved through increased aggregate demand and growth will simply put more pressure on an already overtaxed planetary ecosystem.

To reexamine the theory of effective demand and the policies flowing from it in the face of environmental limits, it is useful to recall Boulding's bathtub theorem. Boulding points out *two* ways to remedy a growing divergence between production and consumption: (1) increase consumption and (2) decrease production. The first is not likely to occur in the absence of government intervention owing to falling profit expectations associated with accelerating accumulation. Thus, the Keynesian solution of government action is required to bring consumption back in line with production. In the second case—in the absence of intervention—production declines creating unemployment and possibly depression. So it seems we are stuck with a trade-off between the environmental costs of growth and the social costs of unemployment.

But have all the alternatives been exhausted? Is there no way to make use of the unique powers of government to remedy overproduction without increasing consumption? In other words, is there some way to have our cake and eat it too; with production declining and employment remaining stable?

3.4 Paths to Full Employment

Building on the theory of effective demand and modern money theory (MMT), post-Keynesians have proposed two alternative paths to full employment. The first and most common approach relies on fiscal policy to fill the demand gap. The second approach calls for direct job creation through an employer of last resort or JG program. Neither policy was designed to address environmental concerns and indeed both promote growth. However, when compared, it is clear that the JG offers advantages over demand management policy with respect to both employment and the environment.

The demand gap approach seeks a handle on employment via the manipulation of aggregate demand. When aggregate demand in the private sector is insufficient for full employment, fiscal policy can be enacted to boost demand (Arestis and Sawyer 2003, 2004). The three essential goals of the demand gap approach are: (1) increasing aggregate demand, (2) stimulating private investment and (3) increasing productive capacity (Tcherneva 2008, p. 67). This approach suffers from two obvious weaknesses. On the employment front, it is indirect. If the goal is to increase employment, why not hire workers directly?[8] On the environmental front, the flaw of the demand gap approach is that it aims to achieve full employment through economic growth. As Tcherneva notes, "this is a pro-investment pro-growth policy" (ibid.).

The JG approach proposed by Minsky (1968), Wray (1998) and Mitchell (1998) represents an alternative path to full employment. Rather than acting through aggregate demand to stimulate private investment, the JG achieves full employment by directly hiring workers. This offers three advantages over demand management. First, it eliminates unemployment immediately. Second, it channels government spending directly to employment. And perhaps most importantly, it can be used to influence not only the quantity but also the quality of employment.[9]

With regard to environmental goals, however, the most important advantage of the JG is that it severs the link between aggregate demand and employment. As Mitchell and Wray point out, "ELR achieves full employment without regard to the level of aggregate demand" (2005, p. 236). If employment and aggregate demand can be decoupled, then it may be possible to decouple employment from economic growth. In other words, a JG might provide a means for overcoming the existing trade-off between economic and environmental goals.

In the context of Boulding's model, a JG provides a novel solution to the problem of overproduction. Suppose a situation in which production and consumption are diverging such that profit expectations are falling. According to the demand gap approach, there are two possible outcomes: (1) falling production, rising unemployment and possibly a depression, or (2) rising consumption, increased aggregate demand and stable employment. With a JG in place, the third option is to allow production and aggregate demand to fall, while maintaining full employment, thus avoiding a depression. In this case, both the economic objective of full employment and the environmental goal of reducing output (throughput) are achieved.

A JG eliminates the negative impact of falling production on the level of employment. If JG workers earn a lower wage than private sector workers (and workers spend what they get), aggregate demand and consumption also fall. Of course, a JG as such does not necessarily serve environmental objectives. After all, it will increase employment and aggregate income, and thus it seems a JG must increase aggregate demand, output (throughput) and economic growth.[10] However, owing to the special nature of JG employment, it may in fact be made consistent with falling aggregate output and income in the long-run.

In this regard, the most important feature of the JG is that it transcends the conditions of monetary production. Because JG work is not constrained by money profits, it can be channeled to all kinds of socially beneficial projects that cannot and will not be undertaken by the private sector.[11] This is the basis for the "green jobs" JG proposal put forward by Forstater (2003, 2004, 2005). However, green jobs represent only one of the possibilities opened up by a JG, and by itself, a green jobs' approach is not likely to bring about the required reduction in growth necessary for a sustainable economy. Another more radical potential opened up by the removal of the profit constrain is that of reducing productivity.

As proposed, a JG will hire off the bottom and "the pool [of JG labor] will tend to contain the least productive workers" (Wray 1998, p. 139). And since the object of the program is to provide jobs, JG employment should be more labor-intensive than private sector employment further reducing productivity. Rather than viewing low productivity as a bad thing, if environmental sustainability requires reduced growth, low productivity ought to be a policy goal.[12] Moreover, it is easy to see how reducing productivity is consistent with improved working conditions since the simplest ways to achieve lower productivity are slowing down the production

process, decreasing the length of the working day and replacing mechanized mass production with more humane and less alienating forms of craft labor. Finally, while reduced productivity as a policy goal may be a tough sell, it should not be forgotten that the point of a JG is to improve peoples' lives and not to increase output.[13]

As a policy objective, reducing productivity raises a serious problem: how is productivity to be measured? Reducing productivity specifically refers to increasing employment (labor time) per unit of output and/or decreasing output per unit of time. The real problem then is how to measure output. In a one-commodity world, there is no problem because a unit of output is defined. In a world of heterogeneous goods, the obvious solution is to convert all goods to money values through the use of market prices. But if money values of output are used to construct a measure of productivity, there is no guarantee that reducing productivity will achieve the underlying goal of reducing throughput because there is no reason to expect that relative prices for any *particular* pair of commodities will provide an indication of relative throughput.

The problem of measuring productivity represents the biggest theoretical obstacle to operationalizing the degrowth model presented in the next section. And while no perfect solution is clear at present, there are a variety of ways addressing the problem without necessarily solving it. To begin with, there is a strong historical correlation between GDP and throughput. This indicates that using money values to measure productivity may be a useful if imperfect solution at the aggregate level. On the other hand, when operationalizing a JG, productivity might be measured on an industry basis overcoming the problem of heterogeneous goods. For example, if JG workers produce wooden chairs that approximate similar wooden chairs produced by the private sector, a unit of output is defined. Now reducing productivity in the JG sector is a simple matter of ensuring that more labor time is required to produce a chair in the JG sector, or that over any period of time JG production results in fewer chairs produced. This can be achieved in the JG sector by (1) adopting more labor-intensive methods, (2) maintaining the same methods but slowing down production and (3) maintaining the same pace and method of production but reducing the length of the working day. The point here is that even though the problem of measuring productivity remains to be solved, it is still meaningful to talk about reducing productivity as a policy goal.

Another possibility that emerges with the elimination of the profit motive and a slowing down of production is an emphasis on *quality* and

durability over *quantity* and *marketability*. In other words, JG work can be geared toward producing the best use value as opposed to the most exchange value. Increasing the durability of output is a vital strategy for reducing rates of production and consumption because, by definition, goods of higher durability are consumed (used up) more slowly. With a falling rate of (physical) consumption, the same stock of useful goods can be maintained at a lower rate of production. As Boulding (1949) argues, confusion in economic theory centered on the concepts of income and consumption has led to the belief that welfare is increased by maximizing production and consumption, "There is a very general assumption in economics that income (or out-go) is the proper measure of economic welfare, and that the more income and out-go we have, the better. In fact almost the reverse is the case. Income consists of the value production: out-go is the value of consumption. Both income and out-go are processes involved in the maintenance of the capital stock … it is the capital stock from which we derive satisfactions, not from additions to it (production) or subtractions from it (consumption)."[14] Thus, "the objective of economic policy should not be to maximize consumption or production, but rather to minimize it, i.e. to enable us to maintain our capital stock with as little consumption or production as possible" (ibid. p.79).[15]

Facing environmental limits, Boulding is right about what our objectives *ought* to be. However, the logic of production for profit dictates otherwise. It is true, for instance, that a house that never depreciated would be an improvement for its owner. The problem with producing durable goods in a monetary economy is that if needs are met, unemployment increases. It is better to build houses that fall apart each year. But this is where the JG comes in. If workers are guaranteed jobs, then increased durability, which lowers throughput, does not threaten employment.

Finally, the JG offers the potential for falling aggregate demand without falling employment. Suppose a JG is in place and consequently the economy is operating at full employment. When a recession occurs, investment, output and employment in the private sector fall. However, the total volume of employment remains stable. Workers simply shift from the private to the public sector. If, as proposed by JG advocates, the JG wage is lower than the private sector wage, then aggregate demand falls as the relative size of the JG sector grows.[16] And if JG work is less productive than private sector work, aggregate output also falls. The key here is that full employment is maintained during the recession even as aggregate

demand falls. And falling output is consistent with full employment so long as JG workers are less productive than private sector workers.

Thus far, it has merely been shown that falling aggregate demand and output are consistent with full employment under a JG scheme. This will occur during a recession, given the traditional JG assumptions. However, *over the cycle*, a JG may result in higher levels of aggregate demand and economic growth because the fall of demand and output during a recession is less than it would be in the absence of the JG. Assuming that during the recovery phase of the cycle the JG pool shrinks to zero, all gains in terms of reduced productivity will vanish, and output over the cycle will be higher than would be the case without a JG. Moreover, if the JG mitigates skill depreciation associated with unemployment and/or raises the productivity of workers re-entering the private sector through job training/placement, this will further stimulate economic growth.[17]

Yet it is highly unlikely the private sector will absorb the entire JG pool during the recovery phase of the cycle, as the private sector has a very poor track record of achieving full employment. This implies that some reduction in productivity will be retained over the cycle. However, with respect to ecological limits, the problem is that the economy will still be growing. And unless economic growth ceases to be a threat to the environment, then growth must halt.[18] This begs the question of whether the JG can be used to purse the more radical objective of degrowth.

3.5 Outlines of a Full Employment Degrowth Model

A two-sector model can be used to derive the minimum conditions required to eliminate growth while maintaining full employment in the context of a JG program. The basic conditions for reducing growth are: (1) the JG sector is less productive than the private sector, (2) the JG wage is lower than the private sector wage and (3) over time, JG employment must grow as a relative share of total employment. The first two conditions are part of traditional JG proposals. What is new in this case is that low and/or decreasing productivity in the JG sector becomes a policy objective. The third condition has not previously been put forward as an intended outcome of the JG.[19] This condition obviously has radical implications. In short, it suggests that the path toward a sustainable economy leads away from monetary production.

Assuming these conditions are met, it is possible to demonstrate how full employment is consistent with a secular decline in output under a JG. To simplify, the following exposition ignores changes in the size of the labor force and productivity growth in the private sector. The initial implementation of the JG will cause a one-time increase in aggregate demand, output and employment (analogous to the one-off inflation likely to occur with the initiation of the JG). However, during the bust phase of the business cycle, workers will be channeled from relatively high productivity, high wage, private sector employment into low productivity, low wage, JG work. If, during the ensuing boom phase of the business cycle, a portion of the JG workers choose to remain in the public sector, then JG employment will grow as a share of total employment over the cycle. So long as some portion of the workers that newly enter the JG pool during each recession choose to stay in the pool during the subsequent recovery, each cycle provides a net addition to the JG sector equal to the net diminution of private sector employment. With JG employment growing as a relative share of total employment, the rate of growth of aggregate output and aggregate demand decline.

Nell (n.d.) provides a useful diagram to illustrate these dynamics. The vertical axis measures aggregate output (Υ) and the horizontal axis depicts employment (N). With a JG in place, the economy is always at full employment (Nf). Private sector employment is measured from left to right, and JG employment is measured from right to left on the horizontal axis. The bold black line indicates the difference in productivity between the two sectors. Actual output is determined by the sum of JG and private sector output. When JG employment is zero, all workers are employed in the private sector and output reaches its maximum. When private sector employment is zero, all workers are employed in the JG sector and output reaches its minimum. When all three conditions of degrowth hold, then over the cycle the economy moves down and to the left along the bold black line (Fig. 3.1).

In the framework outlined above, the rate at which the growth of output declines will depend on two factors: (1) the difference in productivity between JG and private sector employment and (2) the rate of growth of the JG sector as a share of total employment over the cycle. Thus, if we know the difference between productivity in the JG sector and the private sector, we can calculate the required rate of growth of the JG sector as a share of total employment necessary to achieve a specified decline in the

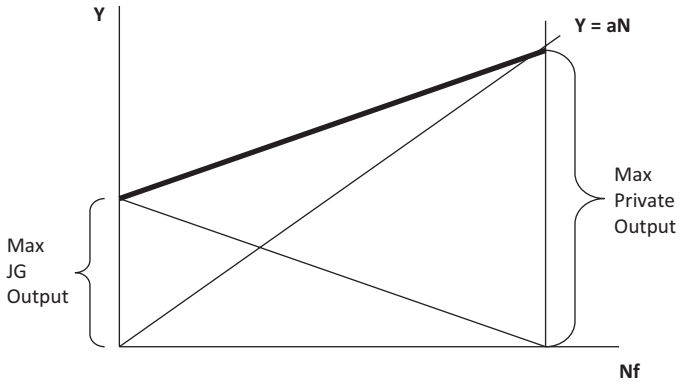

Fig. 3.1 Potential output

rate of growth of output. Or vice versa, given the rate of growth of JG employment as a share of total employment, we can calculate the required difference in productivity between the two sectors to achieve a specified rate of degrowth.

The force driving degrowth in this framework is the business cycle. The endogenous fluctuations of a capitalist economy act like a pump generating a flow of workers into and out of the JG pool. The crux of the whole argument hinges on the appropriate specification of the "valve" mechanism required to ensure that, on average, the in-flow of workers into the JG pool exceeds the out-flow of workers taking jobs in the private sector. The valve cannot be a monetary incentive since wages in the JG must be lower than private sector wages to achieve the reduction in aggregate demand required for degrowth. But because JG employment is not constrained by money profits, a multitude of non-monetary benefits may be offered to encourage workers to *choose* lower-wage jobs in the JG.

So what are examples of such non-monetary benefits? Freed from the profit constraint, a JG opens possibilities for all kinds of improvements in working conditions, hours of work and types of paid employment. How many people currently work jobs they hate, while secretly dreaming of a career in the arts—writing plays or novels, becoming a painter, dancer, actor or musician? How many parents are forced to leave their children at day care so they can pay the bills? How many would go back to school if

they had spare time or income? How many would accept a smaller salary if they could work fewer hours and still have access to health care? How many would accept a pay cut if it meant they could work from home or in their communities? How many would accept a lower wage if it meant they could engage in fulfilling work like growing food, restoring wilderness habitat, building parks or providing care to their friends and neighbors? More important than its potential for altering the quantity of employment and output, the real promise of the JG lies in its potential for transforming the quality of work. Above all, what makes the JG a powerful tool for achieving the goals of degrowth is the choice it provides individuals to opt out of monetary production.

3.6 Conclusion

This chapter seeks a way out of the dilemma posed by the dual crises of unemployment and environmental decline. Keynes's theory of effective demand is a useful starting point for this task because it identifies the underlying causes of both crises. In a capitalist economy, the object of production is money profits. Profits are necessary for employment, and in the aggregate, the realization of profits requires continuous growth. So long as we remain confined to a system of monetary production economy, full employment requires exponential growth, and we are stuck with the trade-off between social and ecological prosperity.

The promise of the JG is that it solves the problem of unemployment by transcending the constraints of monetary production. This opens the way not only to degrowth in terms of declining aggregate output but perhaps, more importantly, in terms of a fundamental transformation of the economy away from alienating and exploitative labor processes and toward a system in which work itself is an end and not simply a means to consumption.

Notes

1. Degrowth is not easy to define. At its core is a rejection of economic growth as a social objective. The idea first emerged in the 1970s alongside The Club of Rome's, *Limits to Growth* (1972) and Georgescu-Rogen's, *The Entropy Law and the Economic Process* (1971). In 1972, Andre Gorz, who is credited with coining the French term for degrowth "decroissance" posed a seminal question: "Is the earth's balance, for which no-growth—or even

degrowth—of material production is a necessary condition, compatible with the survival of capitalism?" (D'Alisa et al. 2015, p. 1). Today, degrowth is an international social, political and economic movement calling on academics and activists of diverse backgrounds to radically reimagine an economic future that is not premised on economic growth. A catalyst for the movement is growing frustration with half-hearted, empty or naïve proposals for "green growth," "sustainable development" or "green capitalism." Such win-win slogans fail to acknowledge the systemic causes of environmental decline and perpetuate the myth that we can address the issue without making fundamental changes to our way of life. By contrast, degrowth has roots in ecological realism and recognizes that any serious response to a problem driven by overuse of the planet must include a decrease in production and consumption.

While exploring ways to produce and consume less is central to degrowth, the movement is about much more than a quantitative reduction of material throughput. Degrowth recognizes that significant qualitative changes to existing forms of social and economic organization are necessary to create a future, wherein both humans and the planet can flourish. From this perspective, the necessity for change imposed by environmental limits is viewed as an opportunity to address long-standing social problems associated with capitalism including poverty, inequality, unemployment, exploitation, alienation and the erosion of community (ibid.).

2. It is important to note that Boulding's concept of consumption is not the same as Keynes's idea of household expenditure. Consumption in the Keynesian sense actually describes an *asset transfer* from businesses to households. Boulding uses consumption in the classical sense to describe the *destruction of assets.*
3. In terms of practical application, the bathtub theorem suffers an obvious setback. Because it is stated in physical terms, we cannot plug in actual values for *P*, *C* and *A* in a world of heterogeneous goods. Nonetheless, the theorem remains true as a matter of identity, and as such serves as a useful heuristic for thinking about physical stocks and flows.
4. Overproduction and underconsumption may be thought of as two sides of the same coin. Both are relative terms defined in relation to one another, and to this extent, they are interchangeable. However, there is a danger in thinking this way. While a given situation may be described by either term, the two terms point in opposing directions toward differing solutions. In an economy that produces more than enough output to meet human needs, it is misleading to describe crises in terms of underconsumption. Indeed, with respect to ecological limits, overproduction *and over*consumption currently coexist.
5. This clearly indicates a problem of distribution, not growth. The long-standing tradition in economics of viewing growth as the remedy to all

problems must in part be explained by a political unwillingness to seriously entertain discussion of redistribution.

6. Wilkinson and Pickett (2009) demonstrate that key indicators of mental and physical well-being are not correlated with aggregate income in the industrialized North. Degrowth advocates argue that the North needs to degrow in order to provide the ecological space for the South to grow (Kerschner 2010; Latouche 2010; O'neil 2011).
7. Kalecki's profit equation captures this relationship (Kalecki 1965, pp. 45–52). In a simplified economy with no government or foreign sector, assuming that workers do not save and capitalists do not consume, profits are determined by investment. Thus, to realize profits, capitalists must invest, meaning the economy must grow.
8. In his critique of the JG, Sawyer concedes this weakness of the demand gap approach, "the attraction of ELR schemes appears to be their ability to guarantee full employment. Variations in mainline public sector jobs or taxation may aim to provide full employment, but that cannot be guaranteed through forecasting errors and implementation delays" (2003, p. 890).
9. Degrowth advocates Alcott (2011) and Blauwof (2012), both highlight the possibility of using a JG program to alter the quality of employment and output.
10. Compared to levels that would exist with no policies in place to mitigate the decline in production.
11. In fact, JG workers can do anything society deems worthwhile. This might include going to school, producing works of art, planting community gardens, taking care of the elderly, raising children, habitat restoration and so on.
12. In this context, "reducing productivity" refers to increasing employment per unit of output and/or decreasing output per unit of time. This goal stems from the assumption that in the aggregate, output is a good proxy for throughput based on the historical correlation of GDP and throughput (Jackson 2009; Kallis 2011). Obviously, reducing productivity in this sense is not desirable in all fields of production. In any field where socially useful goods and services are produced sustainably high productivity may be desirable. Additionally, high productivity may be desirable in any case where it serves to reduce the time required to complete an onerous task without necessitating an increase in output. Finally, reducing productivity does not require the abandonment of any particular technology or technique of production. It can be achieved in any existing line of production by merely reducing the pace of production or the length of the working day.
13. Beyond a basic level, rising income is not well correlated with quality of life measures (see Layard 2005; Wilkinson and Pickett 2009; O'neill 2011).

Indeed, Stanfield and Stanfield (1980) argue that a sustained growth in consumption can lead to a deterioration in quality of life.

14. Boulding points out that we obtain satisfaction from using *existing* goods and from *using them up*. In other words, he distinguishes between *use*, which yields satisfaction and *consumption,* which involves the destruction of some element of the capital stock. For example, we derive satisfaction from the use of a coat, but not from using up (destroying) the coat.
15. Daly makes an analogous argument using the following identity: (service/throughput) = (service/stock) × (stock/throughput).

    "Growth" is defined as an increase in throughput holding the right-hand ratios constant. By contrast, sustainable "development" involves increasing the two right-hand ratios holding throughput constant (Daly 1996, p. 68).
16. Assuming workers in both sectors spend what they get.
17. Note, however, that the stimulus to growth from the jog guarantee (JG) is less than that which would result from a successful demand gap policy. This follows from the fact that the demand gap approach seeks to preempt the recession such that there is no fall in output or demand. This may be unrealistic, but it is nevertheless the objective of the demand management policy.
18. Technological optimists argue that economic growth will solve all the problems it creates and the current trajectory of the economy is toward "dematerialization" and a decoupling of GDP from throughput (for a discussion of dematerialization, see Lorek 2015). However, "expectations of win-win, sustainable growth through technological and efficiency improvements have not been fulfilled" (Schneider et al. 2010). There has been historically and there remains today a strong correlation between GDP and throughput (Jackson 2009; Kallis 2011; Lorek 2015). Even if the future is uncertain, it would be wise to opt for a precautionary approach rather than to bank on the prophesized but unrealized dematerialization of GDP.
19. The JG was originally conceived as an elaboration of Keynes's solution to the problem of unemployment. As such, it was designed to guarantee full employment, stabilize prices and promote economic growth. Environmental limits did not factor into its conception. The JG/Green Jobs proposal seeks to address sustainability, but its aim is limited to *minimizing the environmental effects of full employment*. The goal here is to place sustainability and employment on an equal footing.

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CHAPTER 4

Getting Serious About the Limits to Growth: ELR and Economic Restructuring Under Decroissance

Macroeconomic Policy and Environmental Realities: Can We Have Full Employment Under Decroissance?

Hendrik Van den Berg

4.1 Introduction

In the aftermath of the 2007–2009 global economic recession, there has been an active policy debate centered around what policies could restore economic growth. Should the government expand aggregate demand and directly increase employment? Or, should austerity and other neoliberal policies be imposed to reduce overall debt and deregulate markets in order to make economies more "competitive?" Advocates of the latter approach have claimed that the unusually high levels of government debt in many

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countries restrict policy options, and only the latter approach can restore economic growth and full employment. On the other hand, Post Keynesians and Modern Monetary Theorists (MMT) argue that government debt does not prevent governments from increasing expenditures by means of monetary expansion when there is high unemployment, and expansionary fiscal and monetary policies can indeed effectively restore economic growth. Advocates of these seemingly opposing policy prescriptions effectively argue about which of two approaches are more likely to restore economic growth. A realistic assessment of the scientific evidence on climate change, biodiversity losses, and natural resources clearly shows that both schools commit the same fundamental error: environmental constraints make it impossible for *any* macroeconomic policy to "restore" the economic growth we have experienced over the past two centuries.

We cannot continue to expand the human ecological footprint as we have over the past 200 years. Scientific evidence, continuously and comprehensively updated and analyzed in a sequence of reports by the Intergovernmental Panel on Climate Change (IPCC), clearly shows that atmospheric temperatures are rising, and the cause is almost certainly the growth of human activity.[1] It is also evident that we are losing the biodiversity that safeguards our existence, and many of the services of nature on which human life depends are deteriorating due to overexploitation. In sum, the last 200 years use of carbon-based fuels, the tenfold growth of material consumption per person, and the concurrent growth of the human population to over seven billion persons are together causing massive environmental degradation.

While it is true that a mixture of austerity (government budget cuts, dismantling of the social safety net, privatization of public assets, lowering of labor costs) and stimulative economic policies (some tax cuts and very aggressive central bank injections of reserves into the banking system) have "restored" some traditional economic growth in the United States after the 2007–2009 crisis, it is also obvious that eight years after the recession ended wages remain stagnant, labor force participation rates have declined, nearly all gains from growth have gone to the highest 10 percent of income earners, and government debt remains high. And, in Western Europe, economic growth has been near zero since the 2007–2009 crisis, unemployment still exceeds 10 percent, and government deficits have not been reduced. There are, therefore, calls for a shift in policies that can better induce economic growth. The policy shift in Europe is clearly towards neoliberal policies, however, and concern for the

environment has diminished as the economic crisis has dragged out. For example, the Socialist government of France defied the voters in 2013 and negotiated a "stability pact" with the national business organization MEDEF that included lower taxes on business, lower labor costs, reductions in the French social safety net, and deregulation of business and labor markets. In 2014, the socialist government introduced its "Loi Macron," named after the openly neoliberal Economics Minister, that reduced protections of labor, Sunday opening of retail establishments, and the deregulation of many sectors of the economy. In 2017, Macron was elected President.

At the same time, there is some pushback against austerity policies in countries where those policies have been implemented. But, while the political debates and social conflicts triggered by austerity policies have captured everyone's attention, no one on either side of the debate seems to have noticed that even the weak economic post-recession growth continues to cause carbon emissions and environmental degradation to increase further. For the first time, the 400 mark in carbon particles per million in the atmosphere was surpassed in 2014.

4.2 The Ecological Consequences of Growth that Economists Choose to Ignore

Scientific evidence shows that humanity's footprint on earth is causing rapid climate change, ocean acidification, mass extinction of living species, disappearing land cover, degradation of freshwater resources, disruption of the nitrogen and phosphorous cycles, and many other transformations of our ecosystem. A study by Mathis Wackernagel and associates (2002) estimated that humanity's exploitation of the Earth's resources corresponded to 70 percent of capacity in 1961, but grew to 120 percent in 1999. A few years later, the World Wildlife Fund (2008, p. 2) estimated that "humanity's demand on the planet's living resources … now exceeds the planet's regenerative capacity by about 30 percent."[2] The WWF estimated that the human population began using nature's services at a rate that exceeded the capacity of the Earth's ecosystem to replenish itself some time during the 1980s.

Humanity's efforts to compensate for the stress on nature's services and the depletion of non-renewable resources often made things worse. The so-called *Green Revolution* that increased the amount of food produced per acre during the latter half of the twentieth century has caused

numerous stresses in society. The rapid substitution of machines, chemicals, and an industrial-like organization of agriculture has destroyed traditional rural communities and displaced hundreds of millions of people. The consequences show up in the form of growing urban slums, mass illegal immigration, broken family structures, and greater income inequality. Modern agriculture, among all sectors of the economy, is the single largest contributor to global warming, even larger than transportation and power generation.[3] And, the growth of *monoculture*, the large-scale capital-intense production of single crops covering vast territories formerly devoted to much more varied agricultural production, is the main contributor to the loss of biodiversity. Magdoff (2015) explains that the shift to monoculture is motivated by economies of scale, which are derived from the substitution of large equipment for labor, the heavy application of chemical fertilizers and insecticides in place of more labor-intensive and varied exploitation of the land, and industrial food processing operations in which machinery and assembly-line methods require uniform products. Friedman (2015) warns that the rapid development of genetically modified organisms (GMOs) will further upset the natural processes of our ecosystem in ways that cannot be managed with any reasonable degree of accuracy.

Also, among humanity's efforts to develop alternative sources of energy are biofuels projects such as ethanol produced from corn and sugar cane, which require vast amounts of land and water. Biofuels have also directly contributed to the expansion of monoculture. For example, in Brazil lands have been brought under production, including forests, to expand the production of sugar cane that serves as the raw material for producing ethanol fuel. Ominously, the expansion of cane sugar production has pushed cattle and other types of agriculture into the Amazon basin, the huge region that is the Earth's largest carbon sink. At the same time, efforts to exploit new sources of petroleum are even more environmentally damaging. For example, the conversion of tar sands into petroleum requires large amounts of energy to "melt" the tar, and this use of energy to create more energy not only adds new carbon emissions to the ultimate carbon emissions from using a liter of gasoline, but the processing of the tar sands also pollutes a large area of one of Canada's largest river basins. And, the environmental consequences of new drilling methods such as "fracking" are still unknown, but the massive use of dangerous chemicals, the creation of earthquakes, and the likely escape of large amounts of methane into the atmosphere has led

some countries to ban the process. Finally, the dirtiest of carbon sources of energy, coal, continues to be exploited because the market price of coal reflects only a small fraction of the total social cost of burning coal for fuel.[4] For example, large-scale coal production causes mountain top destruction and irreversible river pollution in Kentucky and West Virginia in the United States.

The growth of economic activity has also caused social conflicts and oppression. The growing demand for material output has in recent years triggered wars over oil supplies in Kuwait, Iraq, and Georgia, threats of war by petroleum importers such as the United States against oil producers like Iran, Venezuela, and Ecuador, and there have been civil wars in more than a dozen African countries for control of assorted natural resources. The continued violence in the Niger Delta of Nigeria is driven by the extreme poverty that exists side by side with the oil industry. Large countries such as China, the United States, Russia, and others are actively engaged in a military arms race in order to expand and maintain their control over the world's scarce resources. Several countries, among them Iran, Pakistan, and North Korea, have developed or are seeking to develop nuclear weapons to protect their carbon resources. International economic integration has disrupted traditional societies and their customary economic relationships. Economically driven social stresses manifest themselves in many ways, including the long-distance international migration of large numbers of people, rising income inequalities within most of the world's countries, and actual hunger for one billion of the world's seven billion people.

In sum, our capitalist economies have brought about technological changes, just as predicted by neoclassical growth theory outlined by Solow (1956, 1957), and elaborated more recently by Romer (1990), Grossman and Helpman (1991), and Aghion and Howitt (1992). However, these technological changes induced by increased energy use and population growth have resulted in a more intense exploitation of the ecosystem rather than a mitigation of the environmental destruction. Human society thus remains on a dynamic path of complex and interrelated economic, social, and environmental changes that are not sustainable. The long-run costs of our current production are much higher than current market prices suggest.[5] This destructive technological reaction has led scientists such as James Lovelock to warn that our very human existence is in danger: "It is not the Earth that is threatened, but civilization."[6]

4.3 Economists' Failure to Deal with the Environment

Most academic and virtually all private financial sector economists failed to see the "dotcom" bubble that was quite obvious to heterodox economists and casual observers in 2000, and those same economists then failed to see the equally obvious sub-prime real estate debt bubble that burst in 2007. Today, we see economists missing what overwhelming scientific evidence suggests is an even more dangerous *ecological exploitation bubble*. Even many Post Keynesians who understand the causes of the earlier business bubbles openly push for more government spending to employ people to build roads that will encourage building more automobiles, more airports that will facilitate even more jet travel, and more ports that will facilitate the shipping of food and resources across the globe. As a politically convenient response to austerity-prone conservatives, economists of other schools, such as Post Keynesian proponents of directed fiscal policies, often fall back to accepting tax cuts for corporations to spur investment in factories and income tax cuts to spur more consumption, not unlike President Obama's 2009 $787 billion stimulus program consisting mostly of income tax cuts and highway construction programs. There was almost nothing in that program to spur the fundamental restructuring of the economy towards long-run environmental sustainability.

The failure to anticipate slowly unfolding ecological disasters is, unfortunately, not as surprising as it may seem from an ecological perspective. Psychologists have pointed out that favoring the present over the future is perfectly reasonable human behavior from an evolutionary perspective. After all, humans exist today because their ancestors were good at quickly focusing on immediate problems, such as dealing with the bear at the mouth of the cave or the finding the next meal rather than being distracted by deep abstract thoughts about the future of humanity. Thus, we could excuse economists for being human when they focus on immediate problems while ignoring long-run issues. However, as professional social scientists, shouldn't economists provide an unbiased objective assessment of the future?

We should note that some economists did foresee the dangers of financial bubbles. For example, Thorstein Veblen (1904) warned us about financialization (the separation of financial activity from the real economy) more than a century ago. A couple of decades later, John

Maynard Keynes (1936, Chap. 12) explained in detail why uncertainty will occasionally, and inevitably, cause financial markets to disrupt real economic activity, and Hyman Minsky (1978, 1982) elaborated further. But, disturbingly, these perceptive economists were pushed out of mainstream economic teaching and thinking by the dominant "marginalist" neoclassical way of economic thinking, to the point that today mainstream economists lack the analytic tools to deal with the danger of financial instability.

It is important to note that this bias in economic methodology has not been accidental. Because economists are the principal spinners of stories that people rely on to make sense of their economic situation, there is a clear motive for the vested interests of high finance to induce economists to develop a research program (neoliberalism) and use a modeling framework (neoclassical marginalism) that put the capitalist system in an unrealistically positive light. Wisman (2013, p. 922) points out that financial and business lobbyists and public relations officers actively manipulated the economics culture in order to induce economists to furnish "… support to free-market ideology, thereby lending 'scientific' support to right-wing policies." In this regard, the former chief economist of the International Monetary Fund (IMF), Simon Johnson (2009), recently explicitly wrote that the financial industry "gained political power by amassing a kind of cultural capital—a belief system," the result of which was that "faith in free markets grew into conventional wisdom …."

The same thing seems to be happening with regard to how economists deal with environmental problems. The economics profession today finds that the neoclassical models that are taught as having universal applicability to all economic issues effectively deprives them of the tools (i.e., models and methodology) that would lead to more realistic and urgent conclusions about our environmental situation. The neoclassical economic models we use assume all economic activity passes through the market system, but the natural environment most often interacts with human economic activity outside organized markets. This is the reason that prices of coal, oil, and gas are such poor measures of their true long-run costs, as documented by, for example, Diaz and Moore (2015) and Shindell (2015). Consequently, the environmental effects of economic activity are ignored when we use those models to analyze issues and economic policies. And, by ignoring real environmental constraints, we are biased towards concluding that restoring economic growth is the best way to reduce unemployment.

4.4 Environmentalists, Appalled Economists, and Other Dissident Voices

Relatively few economists have sought to answer the question of how humanity can reverse its destruction of the ecosystem that is critical for human existence. Among the exceptions were Kenneth Boulding (1966), Nicholas Georgescu-Roegen (1971), and Herman Daly (1973, 1980b), E.F. Schumacher (1973), and, more recently, Peter Victor (2008) and a number of French economists that have embraced the *decroissance* movement. The widely read book warning about the unsustainability of human activity on Earth in the early 1970s, *The Limits to Growth* by Meadows et al. (1972), was not written by economists and generated very little interest among economists. Daly (2014, p. 238) describes the series of conferences that followed the publication of *The Limits to Growth*:

> Somehow by the third conference the theme had mutated from "limits and alternatives to growth" to "management of sustainable growth."…. The new, "more balanced" view was that we really must not limit growth, just focus on good growth rather than bad growth. Growth had somehow become "sustainable", contrary to the main conclusion of *The Limits to Growth*. The reasoning behind this reversal was kept vague. There was an utter failure of nerve on the part of scientists and especially economists …. Indeed, practically no economists attended the conference. The very idea of limiting growth was too big a pill for economists, politicians, and most scientists to swallow. They coughed it up and silently spit it into their napkin at the conference banquet.

After the series of IPCC studies carried out by thousands of scientists from across the world as well as the many other scientific studies that have consistently confirmed humanity's impact on the environment, it is time to stop referring to economists' self-censorship on environmental issues as an avoidance of responsibility. We should call it *evasion*, given that it is a clear violation of the laws of science.

4.4.1 The Hedonic Treadmill

David Lykken of the University of Minnesota studied a sample of identical twins who grew up apart from each other, and he found that the twins' stated levels of happiness were very closely correlated, regardless of the differences in lifestyles they experienced. He concluded that, in the long

run, happiness is 90 percent genetic, and only minimally influenced by environmental factors. In the short run, however, environmental factors could alter happiness substantially. Lykken (1999) suggests that each person has a happiness set point around which his or her happiness fluctuates. That is, people experience variations in happiness over their lifetimes, but in the long run they can, at best, only be marginally happier than their genetically determined set point of happiness.

Philip Brickman and Donald Campbell (1971) coined the term *hedonic treadmill* to describe the seemingly paradoxical urge for people to increase their material wealth even though it has little long-term effect on their happiness. People are very concerned with their relative status in society, and a capitalist society defines status in terms of material wealth. Brickman and Campbell argue that people work hard to raise their income because status-conscious individuals know others are working hard to increase their incomes. Individuals who choose to work less would fall behind and suffer a psychological welfare loss. Each individual, therefore, ends up working hard in a never-ending struggle to keep up with the rest of society. Because everyone does the same, individuals' relative status, and thus their happiness, changes little.[7]

The political columnist Michael Prowse (2003) provocatively used the concept of the hedonic treadmill to describe modern consumerism as the way in which a capitalist system exploits workers. Prowse argued that workers could achieve a higher level of happiness with less hard work and more leisure and non-work activity. The former only provides income for more material consumption, but the latter leads to self-actualization. He thus argues that the only gainers from the hedonic treadmill are capitalists, who, because of the hard work of the hedonically trapped individual workers and consumers, are able to maintain the high profits that keep them wealthier and, because relative status is important, happier than those consumer/workers afraid they will fall behind their peers if they get off the treadmill.

A more far-sighted observer might wonder if there is not some way to arrive at a cooperative global solution, say an international *economic disarmament treaty* under which all countries agree to scrap their hedonic treadmills. Such a worldwide agreement would clearly cause conventionally measured economic growth to slow. But, if more pleasant work and more leisure enable more self-actualizing activity, overall happiness will rise. These observations add a whole new meaning to the traditional revolutionary slogan: "Workers of the World, Unite!"

How much would human welfare improve if all countries responded to worker pressure and instituted a 30-hour workweek? Or, a 20-hour workweek, as John Maynard Keynes (1930) predicted we would have adopted by now? Coote, Franklin, and Simms (2010, p. 2) of the New Economics Foundation explain their call for a 21-hour workweek as follows:

> A normal workweek of 21 hours could help to address a range of urgent, interlinked problems: overwork, unemployment, over-consumption, high carbon emissions, low well-being, entrenched inequalities, and the lack of time to live sustainably, to care for each other, and simply to enjoy life.

So, many people have seriously thought about the issues brought up here. There has been relatively little progress among economists, however.

4.4.2 Les Économistes Atterrés

One group of economists that has not avoided the environmental issue is Les Économistes Atterrés (The Appalled Economists), an active association of French economists who directly respond to what they see as serious biases in mainstream economics. They advocate a set of policies that simultaneously deal with unemployment, social inequities, and environmental degradation that have been referred to in France as *décroisssance* (degrowth).[8] Proponents of décroissance thus call for a completely new economic paradigm, in which resource-intensive human production, or what the environmental economist Herman Daly (1980b) has for several decades called *high-throughput production*, is replaced by resource-minimizing, or low-throughput, production that employs many people, still improves the quality of life, but does not increase resource throughput. There is even a monthly newspaper entitled *Décroissance: Le Journal de la Joie de Vivre* (Degrowth: The Newspaper for the Joy of Living). Décroissance should not be confused with *sustainable growth*, a term often used in the media and by many non-profit environmental groups. Most advocates of décroissance view *sustainable growth* as a contradiction in terms because they interpret scientific evidence as suggesting no form of material growth is sustainable in the long run.

The Économistes Atterrés and other proponents of décroissance reject the possibility of preventing ecological disaster by means of marginal adjustments to our current capitalist system.[9] Décroissance requires a new

form of social technology that will enable humans to reorganize the way they go about living and interacting with their natural environment while improving life-enhancing social interaction. The details of changes these proponents seek are too substantial to be brought about within the time frame required to avoid environmental disaster by "market-based" mechanisms or marginal shifts in policies and formal institutions. Instead, they are revolutionary in nature, and they will require a collective choice to bring about major changes in lifestyles, production methods, human consumption, and economic organization. To prevent environmental crises from strengthening autocratic political tendencies, the Économistes Atterrés (2012) also seek a more democratic and participatory political system in which the wealthy vested interests cannot dominate the political process.

Specifically, Économistes Atterrés like Harribey et al. (2012) propose the following program:

1. End the use of fossil fuels and nuclear energy by massively cutting energy usage and developing non-fossil and non-fissible fuels.
2. Expand public transportation to where it has the capacity to carry the entire population to work and leisure activities.
3. Shift freight to railroads and away from road traffic.
4. Food independence and agricultural sovereignty.
5. Public investment in the economic restructuring, including public ownership of energy, transport, education, and low-income housing infrastructure.
6. Use productivity increases to reduce work hours without reducing labor income.
7. Increase labor's share of total income and reduce capital's share, improve the distribution of income.
8. For macroeconomic adjustment, adjust work hours rather than the number of jobs.
9. Reduce the scope of the market economy and expand the public commons.
10. Establish a transparent process for evaluating the full environmental consequences of all human activities.

Objectively considered, the ten-point program is straightforward provided one accepts the environmental challenges clearly described by the various IPCC reports over the past 20 years.

4.4.3 Some History of Thought

It is instructive to note that the natural environment is, and always has been, an integral part of the overall circumstances that economists must take into consideration when they study economic activity. Human provisioning activities require a great many natural resources and an organized society in addition to the usual forms of capital and labor that economists normally include in the production functions with which they analyze economic activity. Human beings and their ancestors evolved as group animals within an also-evolving natural environment. And, even though it often seems as though the closest contact most of us in a developed economy have with nature is the fruit and vegetable section of the supermarket, our lives are still intimately linked to nature. Our field of economics, however, clearly *has* largely lost all contact with nature.

Economics was not always such an "unnatural" science. For example, in the 1700s, the Physiocratic School argued that even though society was split into three distinct classes consisting of farmers, landowners, and the urban artisan/industrial class, only the farmers actually produced anything that added to human well-being. This was clearly an exaggeration, but this focus correctly reflected the fact that humans fundamentally derived most of their well-being from nature even if they did transform the resources they took from nature. But starting with Adam Smith (1776), economists began to focus more on industrial production, investment in capital, and labor markets, that is, the purely human activities separated from nature. Malthus (1798) pushed nature into the background as a source of diminishing returns but not as an active player who was also an active variable influenced by all other economic activity. The separation became complete with Léon Walras' (1874) mathematical model of an economy that consisted entirely of product and factor markets; anything for which there was not a market thus became "non-economic" activity and was not included in the economist's scope of activity. The Walrasian model provided the basis of what became neoclassical economics, in which economic activity is a purely human endeavor. Economic progress was seen as a process that required the dual human activities of saving and investment/innovation.

Today, the limited capacity of nature and the already large per capita footprint means that much of the production we include in our gross domestic product (GDP) must be scaled back. Policymakers thus have the seemingly impossible task of lowering GDP while facing strong political pressures to boost employment, maintain financial stability, reduce poverty, and raise living standards. So it is small wonder that most policymakers

have quietly let the vested business interests actively muffle the message on the environment so that they can avoid, or at least postpone, the real choices humanity must make. This myopic approach is effectively justified by neoclassical economics and the faux debate between austerity and fiscal stimulus that economists have engaged in the past few years.

4.4.4 A True Post Keynesian Approach

From a historical perspective, therefore, the program of décroissance described above is no more radical than the current monopoly capitalism that has, over the past several centuries, completely reordered the way humans live, organize their economic activity, and interact with nature. In fact, beyond the environmental damage motivated by the monetary profit incentives, the capitalist system continues to accumulate very costly burdens in the form of social and economic inequalities, unemployment, war, class conflict, and the inevitable future adjustments to the economic, social, and ecological damage. Humanity does not face a choice between maintaining the current system as we know it and building a completely new complex mixture of economic, social, and natural systems. Rather, the choice is between an uncertain and probably disastrous future if the current capitalist system is kept in place and an alternative way of living that is less likely to cause the end of humanity. And, as Wagner and Weitzman (2015) argue,we must make this difficult long-run choice with incomplete information and knowledge about each of the options.

Scientists have only a partial understanding of the complex interactions between the economy, society, and nature, although we do know enough to sense that we could be creating a disaster. Advocates of décroissance invoke the *precautionary principle*, which is to avoid doing those things that have some likelihood of causing severe damage. And, they invoke the principle of *policy flexibility*. Specifically, humanity will have to develop more flexible and adjustable planning mechanisms so that the inevitable unforeseen outcomes can be adjusted for and dealt with. You can clearly see the difference between neoclassical economics and the Économistes Atterrés, for example. The latter argue that we will have to make many more decisions in the future as our environments evolve; we do not inhabit a system with a constant and stable equilibrium for which we only have to specify the starting point from which everything will then follow automatically along the lines of mathematical dynamic economic models that neoclassical economists use.

This uncertain environment should actually be familiar policymaking territory for Post Keynesians who understand so well that investment decisions are long-run decisions with outcomes that cannot be foreseen with any degree of certainty. In short, they are well-prepared to also deal with the uncertainty of environmental outcomes. If only we can convince Post Keynesians to abandon their single-minded push for macroeconomic policies to expand production and employment without regard for the environmental possibilities.

4.5 The Role of ELR in Shifting to a Low-Throughput Economy

Clearly, we cannot continue to expand current forms of production. Perhaps other types of production can grow, and employment can be expanded in those sectors while employment in high-throughput activities is reduced. It has been suggested in many casual conversations on sustainable economic development that employment could actually be increased by "going green." Such statements suggest that overall *energy throughput* in economic production can be reduced without causing a rise in unemployment provided new low-throughput production is more labor-intensive than the current energy-intensive sectors of the economy.

Skepticism of such claims is in order here, however, because our current economic and social systems will most likely cause population to continue to grow, modern agriculture to push more workers into more energy-intensive sectors in the developing world, and corporate marketing to channel incomes towards more consumption of energy-using goods and services. As a modern Jevons effect, we will destroy the habitats of more species and consume more carbon energy despite less resource use per unit of production. Nevertheless, it is technically correct to argue that macroeconomic policy should focus on increasing low-throughput, labor-intensive production while also decreasing high-throughput activity. The question is whether this task is compatible with full employment, improved living standards, and social equality.

4.5.1 Identifying Low-Throughput Activities

Structural economic change requires, first of all, the identification of low-throughput provisioning activities. Agriculture presents obvious cases where a shift in economic organization could raise employment

while reducing the throughput of natural resources in the human provisioning process. According to a report by the agricultural study group GRAIN (2014):

> Although big farms generally consume more resources, control the best lands, receive most of the irrigation water and infrastructure, get most of the financial credit and technical assistance, and are the ones for whom most modern inputs are designed, they have lower technical efficiency and therefore lower overall productivity. Much of this has to do with low levels of employment used on big farms in order to maximize return on investment. Beyond strict productivity measurements, small farms also are much better at producing and utilizing biodiversity, maintaining landscapes, contributing to local economies, providing work opportunities and promoting social cohesion, not to mention their real and potential contribution to reversing climate change.

There are other sectors of the economy where labor-intensive low-throughput activities can be expanded to replace capital-intensive high-throughput activities while potentially raising human well-being. The healthcare sector, for example, could be expanded to raise life expectancy and reduce days lost to illness and disability. Also, with ageing populations, there is also a greater need for caregiving in general, and such activity is also often quite labor-intensive. Care for the aged is largely provided informally by family and neighbors, and such voluntary provisioning makes caregiving inherently unequal and dependent on family structures. A more formal system, still highly labor intensive, would enhance security and well-being for the aged in modern market societies.

Education will remain a labor-intensive process even if new information technologies are introduced because much learning is *tacit* in nature. Polanyi (1958) explains that not all technology and knowledge can be *codified*, by which he means those types of information that can be written down in the form of clear instructions, blueprints, or recipes, or explained in textbooks or on the internet. Instead, the passing on of society's stock of knowledge and technology requires personal example and guidance. Also, on-going educational activities for people of all ages are also necessary for maintaining a good social and economic environment, according to educators like John Dewey (1897), and socialist thinkers like Paulo Freire (1970). Especially important given the fundamental inconsistencies of our current economic system and the complex issues related to our coexistence with the natural environment are Dewey and Freire's emphasis on

using education to motivate critical thinking, something that automated and routinized education cannot teach. Freire (1970, Chap. 2) specifically advocated *problem-solving education* that teaches students to think for themselves, feel confident to confront the problems they face, and to feel capable of making choices on how to deal with problems. Such self-liberating education necessarily requires a substantial inter-active and nurturing labor input. Other low-throughput activities like entertainment, art, maintenance services, repair services, sports activities, natural parks, scenic reserves, and activities related to maintaining the commons also need to have more labor allocated to them.

Post Keynesians understand that these shifts in production must be accompanied by shifts in demand. In general, people consume goods and services both individually and jointly, as some goods are rival goods that can only be consumed by one person at a time, while other goods are non-rival goods that many people can consume simultaneously. Only one person can wear a shirt or drive a sports car, but many people can enjoy natural scenery, public transportation, public television broadcasts, and music in the park at the same time. Environmental limits points to the need for a shift towards collective consumption and away from individualized consumption. This shift will require changes in work time versus leisure.

4.5.2 Changing Lifestyles by Reducing Work Hours

The total number of jobs can also be increased by reducing the hours that each individual person engages in provisioning activity. A decrease in working hours is also necessary in order to shift consumption from high-throughput products to less energy-intensive products because consumption of the latter often require more leisure time. Because fewer working hours increases leisure time at the expense of material production, some authors like Schor (2013) make the case that a shift towards fewer working hours will actually improve "the quality of individual and community life." Coote and Franklin (2013) of the New Economics Foundation (NEF) detail how quality of life issue are intimately related to working hours because it takes time to consume services, community activities, and cultural activities. Time-constrained consumers inevitably end up favoring material consumption over collective consumption in the form of community activities. Coote and Franklin argue that the latter are currently under-consumed because people are time-constrained and effectively

forced to engage in high levels of individualized material consumption in place of more time-intensive social activities that actually increase the well-being of group animals such as human beings. In an earlier work, Coote et al. (2010) estimated that if British workers (rather than business owners) capture all expected annual productivity gains over the next three decades and if they take those productivity gains in the form of fewer hours of work, then working hours can be reduced to 21 hours without any loss in income accruing to workers.

Of course, a shift to shorter working hours will require worker solidarity and strong unions, supported by collective government institutions. The market power that employers have gained over workers in most countries by means of political lobbying, immigration, and overseas outsourcing has completely stopped the 100-year-long trend towards shorter working hours in the United States, for example. As a result, median wages actually fell over the past 40 years despite continued labor productivity gains. Shorter work hours have been strongly opposed by employers, and they will almost certainly be actively opposed in the future; hence the Économistes Atterrés' call for stronger democratic institutions and responsive government. The wealthy will not voluntarily cede the privileges that enable them to accumulate even more.

4.5.3 Employment of Last Resort

Keynes (1936) advocated a policy of explicit job creation to combat high unemployment and economic depression. Today, a number of economists have together developed a jobs strategy that calls for the government acting as *employer of last resort* (ELR). Under this strategy, the government stands ready to employ anyone who seeks work at some minimal living wage, so that government employment acts as an automatic employment stabilizer and a basic wage floor. For example, Tcherneva (2013) argues that current monetary policy effectively targets investment, not employment, and there is no reason to expect that more investment will substantially reduce unemployment. In fact, capital is a substitute for labor, and Onaran and Galanis (2012) raise the possibility that an easy monetary policy that increases investment may actually lower wages and thus reduce aggregate demand, with the result that neither aggregate demand nor employment expand. As we now know, in the United States the highly expansionary "quantitative easing" monetary expansion by the Federal Reserve after the 2007–2009 recession was very slow in generating

employment. In fact, the expansionary monetary policies before the 2007 financial crisis generated little employment or wage increases for most workers, and their main effect was to create a housing bubble that ultimately sank the global economy. Tcherneva and other heterodox economists linked to the Post Keynesian school, such as Minsky (1982), Harvey (1989), Wray (1998), and Forstater (2004), have called for more direct forms of job creation by the government.

Some of the rationale for more focused macroeconomic policies above reflects the recognition that general monetary and fiscal policies affect both the demand and supply sides of an economy. One of the alleged weaknesses of the Keynesian macroeconomic model is that it deals exclusively with the demand side of the economy, but this criticism was not entirely accurate even if Keynes' exposition in the *General Theory* did focus largely on the short-term effects of policy. Several close followers of Keynes almost immediately expanded Keynes' analysis to include a supply side as well as a demand side; see, for example, Harrod (1939) and Domar (1946). In the case of ELR, the creation of jobs affects the amount of products produced in the economy. Employing people to teach creates education, and employing people to provide medical services creates a healthier population, just as employing people to build a bridge creates a bridge. On the supply side, ELR can therefore play a direct role in enabling a restructuring of economic activity towards low-throughput production.

In order to guarantee full employment, employment of last resort (ELR) programs can be designed to directly put people to work only in low-throughput industries. At the same time, current high-energy and high-resource throughput industries must be greatly reduced in size, and quickly given the rapidly moving processes of global warming and biodiversity loss. ELR is a program that is not only more effective in creating employment, but policymakers can specify *where* and *what kind of* jobs are created. In short, ELR can directly shift work from high-throughput production, which can be discouraged by higher taxes and outright prohibitions, and towards low-throughput industries through government job creation for workers laid off in the former industries. ELR's role as an automatic macroeconomic stabilizer is greatly expanded under the current scenario of a failing capitalist economy that is approaching environmental disaster. ELR can thus serve as a long-run dynamic stabilizer of the restructuring of human society towards a zero-growth economy, a more equal society, and the sustainable coexistence of humanity with nature.

There is yet another reason to focus on employment: people value their participation in the provisioning process. Neoclassical economics erroneously positions work as exclusively a cost, but economists since Veblen (1899) and Keynes (1930) through case studies by Lopes (2011) and happiness studies by Veenhoven (1996), Blanchflower and Oswald (2000) and Dolan et al. (2008) make it clear that we value work. We value more pleasant work more than stressful or dangerous work, of course, but unemployment is severely problematic to most people even when social programs compensate for the lost income. Hence, an ELR policy can improve human well-being by providing more pleasant and more valued work experiences.

4.5.4 Overcoming Resistance

ELR also plays a critical indirect role in reducing opposition to the restructuring process by protecting workers during the transition process and sustaining the income of workers as the economy transitions to fewer work hours and more leisure time. After all, the difficulty with instituting an ELR program is political, not practical. In most countries, governments already employ large numbers of people, and, in line with the low-throughput industries discussed above, they are well positioned to expand activities carried out in the commons and as public goods. Specifically, government already provides most of the world's formal education, healthcare, social services, and public transportation. In many countries, government also provides financial services, personal care services, and most infrastructure services. Given its traditional status in developing economies, the active government promotion of sustainable labor-intensive agricultural practices will, by default, employ many people. Given the massive job destruction by modern energy-intensive, chemical-intensive, and capital-intensive agriculture, merely reversing this process will restore a very large amount of recently lost employment.

There is a very daunting political problem, however. Global warming, biodiversity losses, and resource depletion require that ELR programs favor collective action over private activities. Restructuring the human economy requires curbing many currently profitable and highly capitalized industries, and the resistance will be fierce. The current resistance to even modest efforts to slow global warming or protect other natural resources clearly illustrates the difficulty in bringing about the thorough economic restructuring. But by ensuring all workers will have a job, ELR substantially

reduces worker anxiety about the disruptive aspects of environmental policy. To date, labor organizations have often sided with capitalists against environmental regulations and eco-taxes because of the fear that workers would lose their jobs along with the capitalists' fear of the loss of wealth. ELR breaks that link by guaranteeing employment. ELR also strengthens labor's power in the labor market by putting a floor under wages, making workers even more likely to actively support the restructuring of the economy.

4.6 Some Final Observations

While Post Keynesians and neoclassical mainstream economists differ sharply in how to deal with economic recessions and restore economic growth, economists from both schools make the mistake of ignoring the fact that environmental constraints make economic policies based on restoring economic growth unsustainable. It does not matter whether austerity or pump priming is more effective for restoring economic growth after a deep recession; economies cannot grow the way they have over the past 200 years. Simple Post Keynesian pump priming that does not alter the structure of the economy towards the consumption of low-throughput products will ultimately fail just as spectacularly as the austerity programs they criticize.

We have described macroeconomic policies that can solve the decroissance-unemployment dilemma. By means of employment of last resort policies we can keep people busy while also restructuring our provisioning activities so that they become more compatible with our natural environment. These ELR policies will also reduce the resistance to the sharp shift in economic organization that our urgent ecological problems call for. However, this economic restructuring clashes directly with the culture and special interests of capitalism. It is difficult to imagine, except in the case of the very clear presence of environmental catastrophe, that capitalist special interests will embrace such an economic restructuring. The vested interests in the capitalist system, the bourgeoisie and the upper echelons of the working class, will not agree with reduced working hours or ELR policies, since both raise the price of labor and thus will tend to reduce the profits and rents that accrue to the privileged in the propertied capitalist system. Nor will they agree to reverse the many privatizations of the commons that we have endured over the past three decades. And a large jubilee canceling all debts while we enhance the social safety net will

be met with equally powerful opposition. It is even difficult to imagine the general population, which increasingly views its precarious capitalist materialist consumption as its only accomplishment in life, will embrace a structural change in our economy. Perhaps the successful introduction of ELR policies can convince a critical mass of workers that decroissance will not imply a reduction in living standards.

It is also important to recognize that ELR cannot, by itself, shift production towards low-throughput production. It must work in combination with explicit curbs on high-throughput activity. As Popp (2002, 2004) makes clear, merely providing incentives for alternatives will not make them happen. Harmful activity, or what Daly (2014) refers to as *uneconomic production*, must be explicitly restricted, discouraged, or banned outright. To get the donkey cart to its destination, there must be a road, a carrot, and a stick. ELR provides elements of all three, but it needs help in the form of carbon taxes, political activism, holistic economic analysis, and functional democracy, among many other institutional supports.

Another concern related to the arguments made in this paper is that the reduction in material output will actually reduce human well-being because other forms of production such as social activity, maintaining the commons, and providing education cannot replace the benefits of material consumption. With regard to this issue, Amartya Sen is well-known for linking human well-being to economic growth in that economic growth gives people more choices. Sen (1985) argues that freedom from poverty and depravation depend on the extent that people have choices to escape from their poverty or depravation. He thus argues that economic growth provides for people's basic needs and offers different people more than one way to satisfy those needs. Sen's framework, known as the capabilities approach to development, redefines economic development in terms of capabilities, which are achieved by means of the growth of production. At first glance it appears as though environmental restrictions on growth thus reduce economic development. However, environmental degradation also reduces choices and freedom. When the natural commons are destroyed, natural resource flows dwindle, and production costs rise freedom-enhancing development also slows.

It is also important to keep in mind that happiness and satisfaction with life are complex phenomena, not easily defined in terms of fixed functions. There is ample evidence showing that people like manageable and predictable changes that improve their personal well-being relative to what they recently experienced, regardless of the point they start from. For example,

in one behavioral study workers were given the choice of earning the same real wage every year of their lives, experiencing gradually increasing wages that average out to the same real level as the constant lifetime wage, or gradually decreasing wages that average out to the same real level as the constant lifetime wage.[10] The majority selected the rising wage option even though it meant starting with a lower wage. Economists found the majority's choice surprising because standard economic theory mandates discounting future earnings relative to current earnings, and discounting the future means the constant and decreasing wages provided higher present values of lifetime income compared to a rising wage that starts with a below-average wage. Aside from the implication that the standard economic practice of discounting future income may not be appropriate for making decisions that maximize long-run human happiness, it appears that people would like to see things getting better over time. These results suggest that people may not be as short-run oriented as some studies suggest. Perhaps it may not be so difficult to convince people that we should alter the way we live and work in order to reduce the strong likelihood that the future will provide us with a much less happy existence, especially if ELR eliminates the threat of unemployment.

It is disconcerting that Post Keynesians have not been able to even gain recognition for simple pump-priming policies in the face of the disastrous results from austerity policies following the 2007–2009 financial crisis. It makes one wonder whether the even more invasive supplementary policies such as ELR, reduced working hours, redistribution, and reduced hedonic competition necessary to avoid environmental disaster will be possible. Perhaps circumstances will eventually become sufficiently dismal and obvious to stimulate support for systemic change of the type that we propose. In the meantime, the difficulty of implementing revolutionary programs and policies should not stop concerned economists from getting their proposals right.

Notes

1. See the latest of these reports, Intergovernmental Panel on Climate Change (2014), which thoroughly confirms the trends described in earlier reports dating back to the early 1990s.
2. The World Wildlife Fund defines humanity's global *ecological footprint* in terms of *global hectares (gha)*. The latter is the average capacity of one hectare of the Earth's surface to produce services and absorb waste, and the former is the sum of (1) all forest, grazing land, cropland, and fishing

grounds required to produce the food, fibre, and timber humanity consumes, (2) all land and water to absorb the wastes emitted when humans uses energy, and (3) all land and water required for humanity's living space, production, transportation, and storage. According to the World Wildlife Fund (2008), the total productive area of the Earth is equal to 13.6 billion gha, or 2.1 gha per person in 2005. In that year, however, the global ecological footprint was estimated to be 17.5 billion gha, or 2.7 gha per person. Hence, the WWF's conclusion that exploitation of the Earth's resources exceeds the planet's regenerative capacity by about 30 percent (2015).

3. See, for example, Union of Concerned Scientists (2015).
4. See Shindell (2015) and Diaz and Moore (2015).
5. See New Economics Foundation (2013). Also, see Wagner and Weitzman (2015) on how to go about calculating the current cost of an uncertain possibility of a catastrophic future event.
6. From a conversation quoted by the French journalist/writer Hervé Kempf (2007), p. 3.
7. David Neumark and Andrew Postlewaite (1998) show that concerns about social status are the main reason why hours worked have not fallen in countries like the United States despite large increases in real income.
8. Les Économistes Atterés (2012), Denis Bayon, Fabrice Flipo, and François Schneider (2010); see also the monthly French newspaper *Décroissance*, as well as the quarterly journal *Entropia*.
9. Note that the proponents of décroissance anticipated Naomi Klein (2014) and her popular book, *This Changes Everything*, by a decade or more in arguing that environnmental decline can only be reversed if we end the single-minded pursuit of profit endemic to our monopoly capitalist system where markets ignore many of the true costs of our energy-intensive production methods and our growing exploitation of nature's ecosystem.
10. George F. Loewenstein and N. Sicherman (1991).

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CHAPTER 5

Public Works Programs as a Strong Means for Land and Water Conservation in Iran

Zahra Karimi

5.1 Introduction

Iran's rural areas have experienced great changes in the past five decades. Oil revenue has been the major source of government investment in the agricultural sector and rural infrastructure. Yet, the result of implemented plans has been far less than what has been expected. While, the value added of the agricultural sector has increased significantly, natural resources, especially water and land, have been damaged noticeably. At present, Iran is experiencing a serious water crisis that is demonstrated by the decline in groundwater reservoirs and deteriorating water and land quality. Rapid population growth, an inefficient agriculture sector, years of successive drought, government disintegrated planning, and managerial shortsightedness, are major causes of the water crisis. Serious water shortages and soil salinization has accelerated migration from dried villages to overpopulated cities, depleting rural areas from their productive population and endangering the food security of the country.

The Iranian government is confronted with a water crisis and poverty expansion in different parts of the country. As such, the government must

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implement policies to combat natural resource degradation and simultaneously provide a safety net for vulnerable people in the stricken areas. Public works programs, with special emphasis on watershed projects, can be a strong means to mitigate water and land problems, by active participation of local beneficiaries. Such projects help local communities to conserve their own natural resources and in the meantime create short term as well as sustainable employment opportunities. Within these programs, social audits on community-based activities reduce the risk of corruption and speed up the process of implementation of projects that have intergenerational payoffs.

This chapter investigates the effectiveness of a public works employment program in combating water shortage and land degradation in Iran. The chapter consists of six sections. The next section presents the theoretical debates about individual and public interests in natural resource management and the role of public works in natural resource conservation. Section 5.3 studies the position of agriculture in the Iranian economy. The section goes on to identifying the causes of water and land crisis and government policies for natural resource management. Section 5.4 shows experiences of public works programs in developing countries such as India and Ethiopia for conserving water and land resources and improving welfare in deprived regions. Section 5.5 discusses about the feasibility of a public works programs in Iran to combat the water crisis and to provide employment opportunities for vulnerable populations in drought-stricken villages. I also illustrate the strengths and weaknesses of public works schemes. The last section concludes, showing that in a participatory public works project, people are empowered to conserve natural resources.

5.2 Natural Resource Management

Neoclassical economists believe that economic agents following price signals that maximize their own interests and assure increasing wealth for the society (Mankiw 2010). Yet, the market mechanism does not guarantee natural resource conservation and long-run profits. A profit-maximizing farmer extracts water from deep wells as much as possible and may not think of the availability of groundwater in the next coming years in his/her own field and neighboring farms.

If each individual selects strategies based on a calculus that maximizes the short-term benefits to self, individuals are predicted to take actions that degrade natural resources and generate lower joint outcomes in the

medium and long term that are not socially optimal. The socially optimal outcome could be achieved if those involved select cooperating strategies for protecting common natural resources (Lichbach and Arbor 1995).

More than 500 studies regarding the common use of natural resources, such as fishing or extracting water from rivers and wells show that about 15 percent of government arrangements for managing the common use of water resources had high efficiency. This rate for farmers' arrangements were more than 70 percent as social audit and active participation of the beneficiaries were major causes of efficiency in farmers' cooperation (Ostrom 1990). Self-enforcing, optimum equilibrium is only possible if all players strongly commit themselves to punish free riders and others that damage common interests of the community (Ostrom et al. 2005). The formidable task confronting any comprehensive natural resource conservation program is to explain both the remarkable robustness of cooperation, and the ultimate results of water and land degradation in the near future if the farmers do not cooperate in public works projects for protecting watersheds (Heckathorn 1991).

Public works programs offer a promising way to protect vulnerable population from shocks to help them cope, and to protect them from the irreversible long-term harm that comes from the sort of sub-optimal coping mechanisms that worsen their future well-being and that of their children (Subbarao et al. 2013). Public works schemes are viewed by many economists as programs of promoting inclusive development (Mitchell 2001; Bhadouri 2005; Hirway 2007; Kregel 2006). Such programs can modify the economic growth path, so as to include segments of the population that are presently excluded from decision-making. Environment-friendly and labor-intensive public investment to combat natural resource crisis and prolonged joblessness and its social—economic consequences is also emphasized in International Labour Organization's (ILO's) *Global Jobs Pact* and World Bank program for expansion of safety net (Subbarao et al. 2013).

Public works programs, with direct involvement of local communities, will make a maximum impact in water and land protection. Further, it creates jobs, raises productivity and skills, empowers people in deprived regions, and mitigates ecological problems. Ultimately by motivating private investment, public works employment programs can revitalize the whole economy.

Awareness and contribution of villagers is an important part in the success of public works projects and are preconditions for sustainable rural

development (Abbott 1995). The experiences of top-down rural development plans in the past decades, with the major objective of increasing production, have serious negative effects on natural resources. Policymakers generally did not mention the knowledge and experiences of local residents and did not motivate them to participate actively in project selection, implementation, and supervision processes. Built on a belief that villagers can be trusted to shape their own future, participatory public works programs uses local decision-making and local capacities to steer and define beneficial projects and having share in the benefits of implemented plans (Subbarao et al. 2013).

Watershed development projects are effective means in addressing the challenges of water scarcity, improving the use of surface water, and recharging groundwater and sustaining agricultural activities in arid and semi-arid regions (Ninan and Lakshmikanthamma 2001). Rural development programs are increasingly implemented with greater participation of local communities and NGOs in the past decades (Yercan 2003). As policymakers accept the necessity of local community's involvement in designing and implementation of watershed projects; as part of an inclusive democratic process (Ahmadvand et al. 2011).

Iran's experience of implementing nine development plans clearly shows that the achievements of costly projects for modernizing the traditional agricultural sector, without active participation of people, is much lower than what is expected; while part of these programs have been harmful to scarce water and land resources. So watershed developments, through public works projects, are highly prioritized in different provinces of Iran.

5.3 The Position of Agricultural Sector in Iran Economy

Iran has a diverse climate in different parts of the country. More than 80 percent of Iran is arid or semi-arid. Maximum temperature is about 50 degree centigrade in deserts during summer. In these parts rainfall is less than 100 mm per year; while average rainfall is about 220 mm for the whole country. Only 1 percent of the country is very humid with more than 1000 mm of rainfall (Table 5.1). Because of the limited rainfall, in most part of Iran, irrigation is necessary for agriculture.

Due to the high evaporation of surface water, Iranians have, for centuries, used special method of water transport, Qanat[1] since 2000 years ago.

Table 5.1 Precipitation in Iran

Annual precipitation (mm)	*Share in total areas (%)*	
Less than 100	13	Extremely arid
100–250	61	Arid
250–500	17	Semi-arid
500–1000	8	Humid
More than 1000	1	Very humid

Source: Iran Ministry of Agriculture 2014

Qanats are still used in Iran. Each community is responsible for *Qanat* repair and conservation. The amount of water drawn from a *Qanat* was never more than the annual recharge rate of the groundwater supply.

Land Reform in 1962 changed the structure of the rural community considerably and weakened the traditional methods of land and water management in Iran. Officials and staff of the Ministry of Agriculture gradually replaced the landlords' power in the villages. Community supervision and maintenance of common natural resources gradually disappeared and the government officials and staff, who had not enough knowledge and experience of common assets management, became responsible for soil and water conservation. Consequently the sustainability of scarce water and land resources that was generally assured by traditional community arrangement for sound usage vanished.

Renewable water resources are reduced due to an ever-increasing demand for water caused by population growth, expansion of agriculture, years of successive drought, and excess water extraction from underground water. During 1960–2010, per capita renewable water resources declined from 5500 to 1750 cubic meters. It is estimated that by 2020, these resources will decrease to 1300 cubic meters (Table 5.2). Iran has faced water crisis since early 2000s and water stress will be even more serious in the near future. According to the UN Development Program, the levels of Iran's per capita water resources are predicted to fall to about 816 cubic meters in 2025.

Agriculture uses more than 90 percent of water resources. Despite the extensive use of irrigation in agricultural production, according to FAO (2014) the overall efficiency in irrigation is quite low (33 percent on average). Inefficient methods of irrigation cause massive water waste. During 1995–2012, extraction from underground water sources increase

Table 5.2 Iran's per capita renewable water resources

Renewable water (Cubic meter)	*Year*
5500	1960
3400	1980
2100	1990
1750	2010
1300	2020*

Source: Iran Ministry of Agriculture 2014
*Forecast

about 6 percent; while the number of deep and semi-deep wells increased more than two times (deep wells from 93,000 to about 196,000 and semi-deep wells from 255,000 to 568,000). Therefore the availability of underground water has declined all around the country and the amount of water drawn from Qanats declined by more than 50 percent (Iran Statistics Center 2015). According to the Iran's Ministry of Utilities, the volume of underground water has reduced by 110,000 billion cubic meters. About 78 percent of Iran underground water resources are in the crisis phase. Because of the sharp decline in underground water resources and serious water shortage in villages, the government arranges to carry water by tanks to 6000 villages around the country. Continuation of this situation encourages families to leave villages (Tabibian 2014).

During 1946–1996, population growth rates in Iran's urban and rural areas were 4.27 percent and 1.08 percent, respectively. Between the years 1996 and 2010, villages experienced a negative growth rate (–0.4 percent per annum) and lost two million of its population. In 1946, the rural population was more than 68 percent of Iran's total inhabitants. In 2010, about 21.1 million Iranians (28.2 percent of the whole population) lived in villages (Table 5.3). Family members provide much of the farm labor. According to Iran Statistic Center (2014), in 2011, there were 1.3 million unpaid family workers in Iran of which 1.1 persons (90 percent) lived in rural areas. Limited water and land resources and the lack of employment opportunities are the main causes of migration from rural areas into cities. During 2008 and 2009 Iran experienced severe drought, which caused evacuation of several villages in different parts of the country. Prolonged drought conditions and increasing water scarcity have deteriorated internal displacement in dry lands. Migration from villages to overpopulated cities, intensified poverty and social marginalization in urban areas and exacerbated the problems of violent crimes and other social harms.

Table 5.3 Iran's rural population

Year	*Total population (millions)*	*Rural population (millions)*	*Rural population (%)*
1956	19	13	68.4
1966	26	16	61.5
1976	34	18	52.9
1986	49	23	46.9
1996	60	23	38.3
2006	70	22	31.4
2010	74	21	28.2

Source: Iran Central Bank 2015

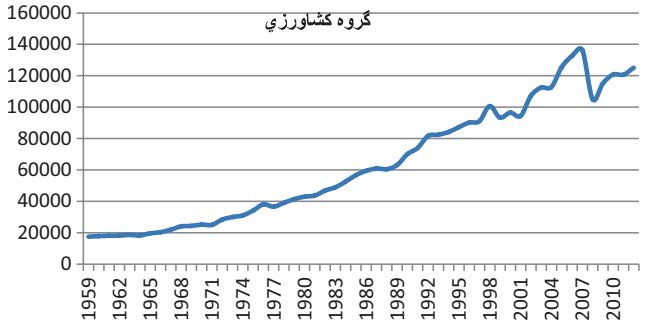

Fig. 5.1 Value added of Iran's agricultural sector. Source: Iran Central Bank 2015

The value added of the agricultural sector has increased considerably during 1959–2006 and has started to decrease since then due to drought and decline in water resources (Fig. 5.1). The share of agriculture in Iran's economy has been shrinking, due to higher growth in industries and services. Iran's agriculture is based on smallholdings. The livelihood of about 75 percent of Iran's rural population is based on some 2.8 million farms. The rest of them (25 percent of rural population) are landless (Iran Ministry of Agriculture 2014). Roughly one-third of Iran's total surface area is suited for farmland, but because of poor soil and lack of adequate water distribution in many areas, most of land is not under cultivation. Only 12 percent of the total land area is under cultivation (arable land,

orchards, and vineyards). In 2012, Iran's agricultural sector contributed 14 percent of the GDP and employed 18.6 percent of the labor force. Most farms are small and their fields are less than 10 hectares. Water scarcity and areas of poor soil are not economically viable, which has contributed to the wide-scale migration to overpopulated cities.

Migration from villages, especially in Sistan and Balouchestan province, Kerman province, and Khorasan province into big cities is speeding up due to drought, water shortage, and lack of job opportunities. Mass migration to cities exacerbated the social problems, such as drug addiction and violent crimes, rooted in poverty and marginalization of migrant workers. Young and educated men leave villages to find jobs in cities. Some villages are evacuated and population of many villages has decreased and the share of elderly people has been raised considerably.

5.3.1 Water and Land Management Policies

Economic policies focused on land reforms in 1960s, expanding agricultural activities in arid and semi-arid regions and low water prices over the last 50 years, have exacerbated the problem of water scarcity in Iran. The redistribution of land to peasant farmers following the Islamic Revolution (1979), that led to a structural change in Iran's agricultural system. The government's policies on food self-sufficiency and agricultural development have contributed to high water consumption rates of the industry. Agriculture came into focus and the government invested in irrigation systems and increased agricultural production. Irrigation rapidly increased beyond the capacity of traditional water systems and cultivation intensified all around the country.

The extraction of underground water was poorly regulated and farmers, de facto, could use groundwater resources freely by drilling deep and semi-deep wells. Groundwater rights correlate with private land ownership and landowners are free to pump water from wells drilled on their own land. Upstream users leave little water for downstream irrigators and food producers in times of drought. With little to no metering to ensure withdrawal limits, groundwater extraction within Iran caused about 70 percent reduction in per capita groundwater availability (Table 5.2) and significant issues with salinity, as water tables continue to fell.

Low charge of extraction of underground water encourages farmers to overexploit water resources. Excessive use of underground water, unsustainable aquifer withdrawal, and drilling more than 500,000 wells, are the

key contributors to the significant decline in groundwater resources and the rise of water crisis and salinization of farmland wells.

The large part of government investment in rural areas is dedicated to infrastructure and the construction of dams. In most parts of Iran, streams and rivers are seasonal, causing flooding during spring and are dry during summer. To smooth up the access to fresh water, the Iranian government has been constructing dams since the 1950s; but this policy was not sufficient to address the growing gap between water demand and supply.

Iran is the third dam builder of the world. There are more than 500 dams currently operating, with approximately 100 more under construction (Iran Ministry of Agriculture 2014). The impact of these dams has been negative; they have produced significant shrinkage in underground water and reductions in downstream access to water. Dam construction has negative impact on upstream and downstream water quality and increased desertification and salinization of land. Some of Iran's lakes have dried and turned to desert due to the combined effects of prolonged drought and dam construction.

Mismanagement of resources led to an unsustainable agricultural sector and a burden on available water. Conservation of scarce water and land resources needs considerable policy changes in water allocation and a commitment to reduce water waste. Water efficiency must be improved. To do so, requires restructuring irrigation systems and closely monitoring groundwater access in agriculture. This can be achieved by implementing watershed projects through a public works program in villages, with active participation of local beneficiaries, especially in dry regions. As the private sector in not interested to invest in common natural resources such as aquifers, direct government intervention through a public works program is an effective means for combating water and land crisis and preventing poverty and unemployment to become a social catastrophe in Iran.

5.4 Public Works Programs for Conservation of Water and Land Resources

Keynes (1936) argues that market economies have two fundamental failings: they are incapable of generating full employment and of improving the income distribution when are left to their own devices. So, government must intervene to solve these market failures. A public works program can circumvent the problems of relying on private spending and investment for full employment. Public works programs can increase

housing, improve the infrastructure, and re-plan the environment of our daily life (Keynes 1937). Emphasizing on the importance of public works, Keynes insists that it is immaterial whether the rate of return on public works is 5, 3, or 1 percent; the first important result is a reduction in unemployment and the second result is that some yield is better than no yield at all (Keynes 1937).

Joan Robinson states that public works can serve as a counterweight to the fluctuations in investment undertaken by profit-seeking entrepreneurs. Public spending on employment-intensive activities tends to have a high multiplier. Public investment represents a major opportunity to generate both employment and address some development challenges (Robinson 1949).

Public works schemes are viewed by many economists as programs of promoting inclusive development (Mitchell 2001; Bhadouri 2005; Kregel 2006; Hirway 2007). Such programs can modify the economic growth path, so as to include segments of the population that are presently excluded from remunerative productive employment; reduces a number of other social and economic costs such as expenditures on prisons, criminal justice system, health care, alcoholism, and drug addiction, which increase by raising unemployment (Wray and Forstater 2004).

Environmentally friendly and labor-intensive public investment to combat prolonged joblessness and its social and economic consequences is also emphasized in the International Labour Organization's (ILO) *Global Jobs Pact*. ILO assessment of employment effects of different fiscal measures has revealed that "the greater the employment orientation of the measure, the stronger the stimulus for the real economy (ILO 2009)". So, putting into action a public works programs, with direct involvement of local communities, will make a maximum impact in creating jobs and will help raise productivity and skills to empower people in deprived regions and will mitigate ecological problems; and ultimately by motivating private investment, can revitalize the whole economy.

During the recent global financial crisis, despite different economic measures, millions of workers have lost their jobs or are forced to accept lower real wages (Dullien et al. 2011). By now, stimulus packages have not focused sufficiently on employment and social protection. On the current trend, global unemployment, and the number of working poor, is forecasted to rise significantly and wages will remain stagnant or even fall. The effects of the recent recession, like previous ones, are undoubtedly increases in unemployment, underemployment, and informal employment. A public

works program, based on the government to act as the employer-of-last resort as proposed by Hyman P. Minsky (1986), would provide cost-effective insurance against raising unemployment. The US New Deal in 1930s, Argentina's Jefes program in 2000s, and India's National Rural Employment Guarantee Act of 2005 are all examples of successful public works that can be followed in the current global recession.

Outsiders cannot develop the rural population in Iran; they have to develop themselves. Development means empowering deprived people and expanding their choices (Sen 1999). A people-centered development strategy is the result of increasing opportunities for participation of majority in decision-making and planning. In new development programs, government is responsible for generating legal structures for transferring power to local communities and facilitating cooperation among people, associations, and government offices. Participation has become a crucial aspect for environmental conservation and rural development. Participatory projects ensure empowerment of rural residents and appropriate gain for the stakeholders. Participation is important especially for managing natural resources like water and soil resources. Individual households lack the social and economic resources to confront the challenges of water shortage and change the irrigation methods. Village residents, especially in arid regions, are well aware of the priority of conserving scarce water and soil resources and are willing to cooperate for implementing projects to increase water and soil productivity and are interested in sustainable management of common resources.

Public works programs that consist of participatory and labor intensive projects to provide temporary employment, especially for unskilled workers, have been in operation for several decades. These programs have two main objectives: employment and small-scale infrastructure in deprived regions. During natural disasters, such as drought and flooding, public works programs create safety nets and provide income for vulnerable groups. Empirical studies show that public works programs have mitigated income shocks and have been an effective anti-poverty instrument. These programs also create useful public goods for local communities (Subbarao et al. 2013).

Public works programs are implemented during the crises and scale down gradually in the time of recovery. Some of the assets created by public works, such as water storage, embankments, afforestation, and soil conservation help local communities to protect the environment and combat water crisis. Soil conservation projects carried out in semi-arid areas have

been effective in slowing down the desertification by generating new forest areas. Public goods generated by the program must have positive impacts on community welfare. Ravallion (2005) argues that India's National Employment Guarantee Scheme, which generates 100 days employment for unskilled workers in deprived regions, also generates assets that have social value. Environmental protection and agricultural projects such as irrigation, afforestation, soil conservations, and watershed development are prioritized in drought-stricken countries that face water shortages and soil salinization.

Public works projects are selected with direct involvement of local beneficiaries. Participants' knowledge and experiences are an important part of an effective solution to communities' problems, especially regarding water shortage and soil quality. Beneficiaries who know their priorities are mentioned by government officials in the project selection process, they participate more actively in implementation and supervision procedures, and when the needed facilities are built by their own works, they will maintain it more carefully as their own assets.

Public works programs have been applied in many developing countries in the past decades. In 2009, in Madagascar, public works projects were mainly concentrated to the agricultural sector to assure food security in deprived regions that mostly affected by cyclones and other natural disasters. These projects consisted mainly of reconstruction and repair of damaged irrigation facilities such as irrigation canals, small dams, bridges, clean up of canals and routes.

In Bangladesh, the "Food for Work" program has been operating since 1975 to provide short-term employment for the rural poor during the dry season. Major projects are river embankments, irrigation channels, and services like construction and maintenance of rural roads. In Pakistan, public works projects were concentrated on agricultural activities such as reforestation, catchments management, the repair and improvement of irrigation and drainage systems, and flood protection (Subbarao et al. 2013).

Morocco created a public works department to mobilize the underemployed or unemployed workforce to implement labor-intensive projects in 1961 to mitigate external shocks of droughts. The major goals of these projects are to generate temporary jobs for rural underemployed, especially during dry years, and to limit rural migration by improvement of rural living conditions. It thus constitutes a safety net for a large part of the population, especially in rural areas. Public works

projects in rural areas are mainly construction works, well digging, water supply, irrigation channels and cisterns, and reforestation projects. In 2005, the program provided nearly 14 million workdays of employment (Jalal 2007).

5.4.1 Argentina's "Jefes Hogar" Program

The public works program *Jefes de Hogar* (Head of Household) was presented in Argentina in 2002 (Tcherneva 2005). The country faced an economic crisis with the collapse of its capital market in 2001. More than 50 percent of the population (9.6 million persons) and about 75 percent of children lived under the poverty line. Unemployed heads of households with underage children, persons with handicaps, or a pregnant woman were eligible to participate in the program. *Jefes* paid half of the poverty line income for half-time work, approximately the equivalent of USD 160 per month, in exchange for 20 hours of work in community projects. The *Jefes* program had reached around 2 million beneficiaries by the end of 2003 (Tcherneva and Wray 2005). The hourly wage was set low enough for self-selection to result in beneficiaries from among poor people and also not to discourage them from seeking more permanent (better paying) jobs. More than 80 percent of jobs in *Jefes* program were related to small agriculture activities and services like garbage collection, repairing sewage systems, and bridges.

Expenditure on *Jefes* reached 1 percent of GDP in 2002, while by creating jobs in *Jefes* plan, the share of households below the poverty line dropped to 25 percent. Furthermore, this plan enhanced social participation in economic and political affairs and expanded democratic actions among deprived and marginalized people. Economic recovery reduced the number of applicants for the *Jefes* program and helped many participants to find jobs with higher wages in private sector (Marshall 2004).

5.4.2 Watershed Development Projects in Ethiopia

In 2004, the government of Ethiopia in collaboration with the World Food Programme applied a public works program, mainly a community-based participatory watershed development program, to confront the negative effects of drought. The program had two main objectives: temporary employment creation and infrastructural development, especially in rural areas.

All public works projects are small and have the process of participatory community-based watershed planning. Environmentally friendly and sustainable projects generally are selected from the bottom up and handled by the community members living in the relevant watershed areas. The goals of these projects are mainly to improve land productivity, to restore soil fertility, and to increase access to drinking and irrigation water. By implementing the prioritized projects, local beneficiaries contribute to the development of their needed assets and optimize the use of their own natural resources. Local communities who are the owner of created assets have also the obligation to maintain the assets and manage the use of these assets (Subbarao et al. 2010)

During 2004–2009, the public works program helped about 7.6 million households to cope with chronic droughts and food crisis. It also created community assets to promote soil and water conservation that was the priority of the poor agricultural communities. Improved water conservation has led to increased agricultural productivity and the rise in groundwater table. Some of the dry springs started to flow again and income of rural communities increased from higher agricultural production, area closure, improved access to markets, education, and health facilities (Grosh et al. 2008).

5.4.3 India's NREG for Solving Water Shortage Problems

India has implemented public works since the 1950s, shortly after independence. The main objective of the public works program was providing temporary employment during the agricultural slack season. Maharashtra Employment Guarantee Scheme (1972–1973) was implemented in a huge dry and arid zone and focused on all types of irrigation structures. The program was successful to substantially increase the areas under irrigation for a second crop (Subbarao 2003).

In 1987, India was hit by a massive drought. Government expanded the public works program to all drought-stricken provinces to protect the poor from severe consumption decline (Rao et al. 1988). India's Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) is a more recent case of public works. Since 2006, MGNREGS has delivered the largest public works program in human history to combat poverty and inequality and raise productivity in backward areas (Drèze and Oldiges 2009). The program provides 100 days of employment upon demand in rural India, for men and women alike, at the minimum wage

that is complemented by a social security and a national health insurance scheme (Walker and Brechin 2010).

Under MGNREGS, local administrations are legally bound to provide work on demand to any worker or group of workers who apply for work, within 15 days of receipt of a work application. In the event that the local administration fails to provide work, an unemployment allowance is to be paid to the workers. The Act mandates that at least one-third of the workers should be women (Khera 2009). People enroll in the scheme when they need a job and income support and they leave it when there are better opportunities during upturns.

MGNREGS expenditure during its first year of operation was USD 4.5 billion and generated about two billion days of employment (Hirway 2007). Major projects mainly consist of renovation of traditional water bodies, provision of irrigation facility, soil conservation and land development works, afforestation, flood protection, and construction of infrastructures in rural areas. Evidence suggests that the program reduces rural unemployment by 10–35 percent, at a cost of 1.7 percent of Indian GDP per year (Sudarshan 2009). In 2013, almost 56 million households have had access to this program (Subbaru et al. 2013).

5.5 Public Works for Confronting Water Crisis in Iran

Years of successive drought, declining income, escalating unemployment and low-paid insecure jobs, and increasing concern about the economic and social costs of rising poverty forced the Iranian government to react to these problems by effective policies. The private sector is not interested in investment in agriculture, because of low rate of return in this sector, compared to services. Thus, government investment plays the major role in agricultural growth and rural development. Government investment projects in rural areas were generally top-down without presence of local stakeholders in the design and implementation processes. Lack of participation of villagers and NGOs is one of the main reasons of low quality and high corruption in the process of implementation of such plans. Almost all responsible organizations for rural development were established out of villages.

The results of such projects were indifference of local residents and very low gains from capital-intensive investment (Saleh et al. 2008). Despite various government programs for rural development in the past six

decades, about 50 percent of villagers are still marginalized and live in unfavorable conditions, among them 12 percent are very poor and 38 percent are poor (Jafary and Bakhshoudeh 2008).

Given Iran's unfavorable business climate, a public works scheme is an effective active labor market policy that can be used as an instrument of last resort in fighting chronic water shortage, unemployment, and poverty simultaneously. Public works schemes, with direct involvement of local communities, can be the most efficient program to prevent water crisis and income inequality from becoming a social disaster. Iran has an enormous investment deficit in irrigation facilities and rural infrastructure and public services, such as soil conservation, improvement of water delivery systems, forestation, flood control, roads, drainage, and sewage and sanitation, especially in remote and deprived regions; while, many people who are willing to work, are excluded from productive employment.

Naturally villagers understand the needs and potential opportunities of their society, yet governments do not utilize this ability and weaken the motives of people for improvement of their living and working conditions. Public works can revitalize the sense of civic duty, citizenship, social cohesion, and community involvement and at the same time can mobilize beneficial communities to increase water productivity and conserve scarce natural resources, and stimulate sustainable agricultural activities. Successful public works programs can be helpful in controlling inflation in the medium and long run by encouraging private productive investment by rising production in agriculture and industrial sectors and reducing the share of money that is attracted by speculative activities. Growing private sector investment can create jobs and curtail the need to implement more public works schemes in the medium and long run.

Khaledi et al. (2008) show that traditional forms of public investment has positive effects on agricultural growth, yet are not successful at conserving water and soil resources, and combating rural poverty, as the benefits of growth are not trickled down and the poorest of the poor do not gain from the increase in production. Moreover, capital injection into agricultural activities can accelerate growth, but at the same time may degrade water resources if the balance between amount of extraction and recharge of water resources is not maintained.

Participation of villagers in designing, implementing, and inspection of watershed and other public works projects can empower local communities, guarantee long-run conservation of scarce water resources, and accelerate the process of creating the needed infrastructures and jobs. Public

works projects can be designed by the collaboration of local communities, government officials, and NGOs such as *Towns' and Villages' Councils*, environment protection groups, and women and children advocates. "Villages' Councils" can organize people's participation in formulating and implementing the centrally/provincially financed public works projects. Council members are generally from the higher socio-economic strata of rural society, that live with people in villages and that have some experience of councillorship. So it is clear that councils are largely the domains of traditional rural elites. Up to now, there was not strong motivation by governments and Villages' Councils to utilize the potential participation power of farmers and mobilize them to solve problems of water shortage and soil salinization, especially in drought-stricken regions.

The knowledge of the people in rural areas is underestimated. Although, rural population may lack formal education, they have great capability to organize and endow themselves with resources that they would not have access to in an uncoordinated state. Implementing public works projects enables rural populations to train, develop, and augment social capital that is imperative for conservation of common natural resources. Local residents can participate in beneficial community-based activities and design projects for conservation of water and soil resources, using local knowledge and experiences as well as new sciences. Implementation of the most needed projects, which is designed by communities, will accelerate economic growth and have intergenerational payoffs. Furthermore, engagement of the local community in the process of project design and implementation creates the sense of ownership and improves community members' contribution in safeguarding and maintenance of common assets that are the results of completed projects.

5.5.1 Participatory Watershed Development Projects in Iran

Since the mid-1990s, several participatory watershed development and natural resource conservation projects have been implemented in Iran by the financial and technical supports of international institutions such as UNDP and Global Environment Facilities. Carbon Sequestration Project (CSP), Hable Roud Sustainable Management of Land and Water Resources and The Middle East and North Africa Regional Programme for Integrated Sustainable Development (MENARID) are the most important projects that consists various participatory projects that can be classified as public works projects.

5.5.1.1 Carbon Sequestration Project

The Carbon Sequestration Projects (CSP) was implemented in Sarbisheh, South Khorasan province during 2003–2014. It is a collaboration of local beneficiaries, Iran's *Forest, Range and Watershed Organization*, and the UNDP. The goal of the projects is to revive destroyed pastures and empowering local communities. Participatory Carbon Sequestration Projects to protect soil and water resources are a kind of public works programs. Total cost of the CSP in the first phase was about USD 3,596,000 which was financed by Iranian government (USD 1,854,000), UNDP (USD 1,016,000) and "Global Environment Facility" (USD 726,000). International institutions support CSP as such activities help to sequestrate atmospheric carbon for both local and overall global benefit. During four years of implementation of CSP, Human Development Index of South Khorasan Province increased from 0.441 to 0.517 (UNDP 2015a).

Major objectives of these projects were empowerment of low-income groups and development of rural infrastructure in arid and semi-arid regions. Project participants were encouraged to establish non-profit institutions and apply projects to improve water and soil resources, reduce poverty, create employment opportunities, and empower women (UNDP 2015). CSP for soil conservation includes ground preparation, seedling production, planting, weeding, and watering rangelands, maintenance range and improvement of ground and underground water reservoirs. The project also consists of public awareness and information dissemination and natural resource management training for local beneficiaries and government officials and staff. A very important positive impact of forestation through CSP is sand stabilization that created serious concerns in many arid and semi-arid provinces, especially in Sistan and Balouchestan and Khuzestan.

The main focus of CSP is promoting a participatory approach and to motivate local communities to involve actively in natural resource management and to promote cooperation between local beneficiaries, local Government and international partners. CSP in Sarbisheh was successful to cost-effectively reclaim desertified rangelands and to improve the productivity of the semi-arid region through implementation of public works projects. The impressive achievements of the pilot projects and revival of destroyed natural resources have expanded to several provinces. CSP is well known as a successful experience in environmental conservation and sustainable rural development. The participatory pilot project in South

Khorasan province is replicated in 16 other provinces across Iran in 2012; and its total budget increased to about $4,635,000 of which UNDP will provide $1,446,000 (UNDP 2015). In seven provinces about 684,000 hectares of arid and semi-arid areas are covered by CSP to rehabilitate sustainable agricultural activities (UNDP 2015b).

CSP motivates local communities to actively participate in the decision-making process for managing water and soil resources and rangelands. About 2500 people have been directly affected by the implementation of CSP in Sarbisheh. Rehabilitation of dry land was taken place in 15,000 hectares; a further 15,000 hectares under range management. These participatory projects also trained government officials and personnel and showed that desertified fields can be revived by collaboration of communities, government local offices, and NGOs (FAO 2004).

The project is intended to establish a national model for sustainable development and inclusive growth that can be implemented by the beneficiaries themselves for reviving arid and semi-arid regions and sustaining agricultural activities and improving livelihoods for local poor people. Therefore, CSP is able to create close linkages between the improvement of natural resource management and poverty mitigation.

5.5.1.2 Sustainable Management of Land and Water Resources of Hableh Roud

Sustainable Management of Land and Water Resources of Hableh Roud started as a joint project by Iranian government and UNDP in 1997. Hableh Roud Watershed that consists of 1.2 million ha was selected as a pilot area for participatory projects to sustain utilization of land and water resources and to increase welfare of local communities whose living is mainly dependent on natural resources in the Hableh Roud Watershed. Eight villages in Tehran Province and nine villages in Semnan province were selected as pilot villages.

Interviewing local residents collects necessary information about potentials and problems of agricultural issues and the projects are designed by active participation of beneficiaries. During 1999–2003, the total cost of 54 and 27 watershed management and combating desertification projects in Tehran and Semnan provinces was 6432 million rials (about USD $650 million) and USD $330,000 as hard currency.

UNDP panel of experts play an important role in project evaluation. The committee visits responsible government officials and also visits activities in pilot villages, and reviews the documents of finished and unfinished

implementing projects. They provide reports about the weaknesses of documentation and lack of cooperation between various government departments and offices who must support participatory- and community-based projects. Despite the weaknesses in the various stages of design and implementation, the program of Sustainable Management of Land and Water Resources of Hableh Roud is evaluated as a successful program that can be extended to stabilize land and water resources in other provinces.

5.5.1.3 The Middle East and North Africa Regional Programme for Integrated Sustainable Development (MENARID)

The Middle East and North Africa Regional Programme for Integrated Sustainable Development (MENARID) International project is being conducted in Algeria, Egypt, Iran, Jordan, Morocco, Tunisia, and Yemen. In Iran, the project started in 2010 with collaboration of the Iranian government's representative from the *Forest, Rangeland and Watershed Management Organization* and international representatives from the *Global Environmental Fund* and the UNDP. The main goals of the project are to promote management of natural resources to sustain the delivery of goods and services needed by local communities and to lift obstacles of integrated Natural Resources Management by developing an effective and sustainable land and water management practices.

MENARID projects consist of four type of agro ecosystems (rang lands, rain-fed agriculture, irrigated agriculture, and forest/woodlands) in five provinces, Sistan and Baluchestan, Kermanshah, Yazd, and also Semnan and Tehran which are pilot sites of Water and Land Resources Sustainable Management of Hableh Roud. MENARID identifies multiple demands of water in and among countries to ensure that water is not excessively used in upper side of watersheds and water is accessible for the farmers in lower sides. Active participation of local beneficiaries is the key feature of MENARID projects.

5.6 Challenges of Public Works Program for Combating Water Crisis in Iran

There might be several shortcomings in public works programs, such as the difficulty of arranging appropriate organizations, weak design and implementation capacities at local levels, and the risk of abuse of resources and corruption.

5.6.1 Political Manipulation

Public works programs must be implemented by close cooperation of local population, government officials, and NGOs who are most familiar with the economic needs of their communities. Arranging the processes of designing, financing, and executing the projects is a difficult task. Designing and implementation of public works require an extensive and solid network of institutions at the local level, with the technical and operational capacity to choose the works that need to be done, to organize the administrative work, and to supervise all actions. Furthermore, the allocation of program funds between provinces or states might be politically biased—favoring the factions or groups in power or their supporters—rather than determined by objective indicators of need (Marshal 2004; Ravallion 2005).

Public works programs need an efficient institutional structure to support smooth implementation, ensuring transparency and accountability. According to Iran's constitution (1980) *Towns' and Villages' Councils* are the means of public participation in policymaking and supervision. Towns' and Villages' Councils which are directly elected by communities vote are the main institutions to define public works projects regarding the needs of local population.

So far, elected *Towns and Villages' Councils* have had negligible effects on economic and social well-being of their constituency. Most of the *Councils* do not have financial and technical capability to design and implement beneficial projects for their own communities and have not been success to mobilize local, physical, and human resources to stimulate the economic and social changes. *Towns' and Villages' Council* will have the responsibility of preparing annual action plans according to the community's priorities. All public works' applicants must be registered and the Councils must announce the list of selected workers and the data must be accessible to all members of related communities to prevent corruption. Decentralization of project development, supervision, and administration can reduce the administrative burden on the central government while also ensuring that public works projects meet local needs.

There might be several shortcomings in public works programs, such as the difficulty of arranging appropriate organizations, weak designing and implementing capacities at local levels, and the risk of abuse of resources, and corruption. There is also the risk of clientelism, discrimination against special groups, and political manipulation in the implementation of the

programs. Scarce jobs generally must be rationed among low-income households. Given the large numbers of unemployed poor in Iran's deprived regions, it is possible that political considerations influence the procedure of workers selection, favoring the factions or groups in power or their supporters—rather than determined by objectives.

If public works projects cannot be designed and implemented by harmonized cooperation of local people, government officials, and NGOs, its impacts on the livelihood of people in deprived areas will be limited and after a while, people will start to think that public works are new source of rent-seeking for interest groups. Therefore, these projects must be implemented by close cooperation of local population, government officials, and NGOs with special emphasis on the program's transparency and accountability both at the local and national levels. Political will to empower *Towns' and Villages' Councils* and other NGOs to enhance social participation is a key factor in creating the success of public works schemes. Social cohesion can put in place strong checks and balances against possible error, fraud, and corruption. Yet successful results from such programs in many developing countries like India and Ethiopia, and good results of implementing participatory pilot projects in different parts of Iran, create hope and optimism about the probable positive consequences of implementation of public works programs in Iran.

5.6.2 Rising Inflation

Public works program will increase the income of households, especially in deprived dry regions and will boost the aggregate demand that can generate inflation. Furthermore, the private sector must offer wages higher than the public works fixed wage to employ new workers. At the same time, rising income of poor families, by work in public works programs, can increase the demand for domestically produced goods and services and motivate the private sector to expand production capabilities and to create new jobs. Insufficient demand for domestic products of textile, home appliances, and electronic industries and high demand for imported clothing and luxury durable goods caused the closure of many Iranian firms.

At present, the federal government implements a policy of cash transfer[2] (about USD 13.5 per month) to all Iranians. By eliminating the dividends for wealthy families (eliminating about four million people) a public works project can be financed in the first phase of implementation in the

provinces with severe water shortages and widespread poverty, without putting pressure on federal budgets and without the risk of high inflation.

5.6.3 Jobs for Women

In 2011, about 85 percent of 15–64 years old women were inactive; as job opportunities for women in most economic sectors are seriously limited. Large parts of potentially active women, frustrated of useless job searching, stay at home and become inactive. By implementing a public works scheme in drought-stricken regions, considerable numbers of inactive women will ask to participate in the programs. Yet in most projects, because of the traditional approach of the Iranian people, there will be very limited opportunities for women. Therefore, it is necessary to design special jobs in health clinics, child and elderly care centers, libraries, accounting, and supervision for educated and less-educated women, especially women head of households. Such works will empower women and will promote the wellbeing of the communities. Therefore, it is understandable that a public works program cannot reduce women's unemployment rates considerably; as many women will enter the labor market in the areas that new job opportunities will emerge. In fact, such programs will reveal the real number of potential active women who are discouraged to continue the desperate search for jobs in the current stagnant situation of the labor market.

5.7 Costs of Public Works Program

Public works programs are adaptable and can easily be tailored to the needs of Iran's deprived regions, where the poor are disproportionately located, taking into account their capacities and constraints. Labor-intensive public works generate jobs for workers not covered by any other safety net program in these regions. Therefore in the first stage, public works programs can be implemented in provinces that face a severe water shortage, such as Sistan and Balouchestan and Khouzestan provinces. These provinces are in border lines with ethnic minorities, and they exhibit widespread poverty and chronic unemployment and underemployment problems.

It is expected that there will be a sufficient number of projects to be defined by the active involvement of local beneficiaries to improve conservation of

water and soil resources. Central and state budgets for public works schemes can be released to local government offices that must implement projects with close collaboration with local beneficiaries and non-government institutions.

To prevent competition with existing private firms, wages in public works programs must be set at the community level below the market wage. Because of the weak enforcement of minimum wage legislation, the market wage is below the minimum wage in a vast informal sector all around Iran. At present the formal minimum wage is about USD 6.5 per day, so a wage rate of USD 6 per day can be reasonable in public works projects. If labor costs consist 70 percent of total costs of labor intensive projects, 20–30 percent of minimum program costs are provided for the nonwage component to cover the cost of materials, wages for skilled workers, and administrative expenses, and if projects are to be fulfilled during 90–180 days, the total cost of public works schemes is between USD 29.25 million and USD 175 million per month or USD 351 million and USD 2.1 billion—less than 0.5 percent of Iran's GDP in 2012 (Table 5.4).

The whole package of programs will be less than 10 percent of government expenditure. The Iranian Government can finance public works programs by cutting cash transfer to upper-middle incomes and high-income households or by a fraction of the oil revenues to improve natural resource conservation, mitigate the challenges of the water shortage, and increase the income of poor households in dry lands. Iran can benefit from ILO and World Bank assistance to provide technical backstopping and consultancy services for the program design and execution as well as evaluation and monitoring.

Table 5.4 Public works cost estimates

	Scenario A	*Scenario B*	*Scenario C*
Participants	1,500,000	1,000,000	500,000
Wage rate/day $	6	6	6
Working days	180	120	90
Total labor cost	1,620,000,000	720,000,000	270,000,000
Non-labor costs	486,000,000	216,000,000	81,000,000
Total costs	2,106,000,000	936,000,000	351,000,000

Source: Author's calculation

Public works schemes, by reviving agricultural activities and encouraging private investment in different economic sectors, will prevent unemployment and underemployment to become a social disaster and will reduce a number of social harms and their related costs such as expenditures on prisons and the criminal justice system, health care, social work, and other spending necessitated resulting from poverty, unemployment, and mass migration from drought-stricken villages to overpopulated cities. In addition, social capital will be increased among marginalized groups, especially ethnic minorities living in dry cross-border areas, such as Sistan and Balouchestan, through more social inclusion and economic justice.

5.8 Financing Public Works Program

The Iranian government must finance a public works programs. Part of the expenditures of this program can be covered and compensated by reduction in the costs of unemployment benefits, hospitals, jails, and other losses of social harms that are caused by expansion of unemployment, underemployment, and income inequality, especially in drought-stricken regions. Direct and indirect effects of public works programs can revitalize economic activities and can also motivate private investment in productive sectors that generate employment opportunities. So, it is expected that when the economy enters into the phase of recovery, the need for public works projects will be declining and an increasing part of public works participants can start their own businesses or find higher paid jobs in private firms.

Beside government direct investment, charities and NGOs that advocate green environment or fight against poverty can support the program financially. Local beneficiaries also can contribute in building community assets by offering their own work or necessary materials to projects voluntarily.

International institutions such as the World Bank and UNDP can provide some financial support. In the past 15 years, UNDP and some other UN institutions supported Iran's participatory projects to combat the challenges of natural resource management. By lifting international sanctions against Iran, more generous financial and technical support from international institutions can be allocated to the public works programs which will lighten the burden of program expenditures on the government budget.

5.9 Concluding Remarks

For millions of unemployed and underemployed workers, especially in drought-stricken regions, decent living is out of reach. Government development plans in rural areas have failed in conserving natural resources and combating poverty, income inequalities, and creating sufficient jobs opportunities in the past decades. However, the need to find more sustainable programs for reviving agricultural activities in dry lands by encouraging a group of countries to implement alternative policies, such as public works programs to address the basic needs of millions farmers and their families; and emphasize that employment and social protection must be at the center of fiscal stimulus measures to protect the vulnerable and reactivate investment and demand in the economy. This approach relies on strong positive multiplier effects to create virtuous cycles of employment and productivity growth. Social audits on community-based activities reduce the risk of corruption and speed up the process of implementation of projects that have intergenerational payoffs.

Iran faces water and labor market crises because of years of successive droughts and decline in job opportunities, especially in arid regions such as Sistan and Balouchestan, Khouzestan provinces. Water crisis is demonstrated in declining groundwater reservoirs and deteriorating water and land quality. Rapid population growth, inefficient agriculture sector, years of successive drought, government disintegrated planning, and managerial shortsightedness, such as unmetered access to underground water and widespread dam development, have caused degradation of water and land resources and have been major causes of the current water crisis.

Despite much federal investment in rural development plans, Iran's villages are still faced with the challenge of degradation of water and soil resources and large deficits in social services and basic physical infrastructure, especially in remote and deprived regions. Water delivery systems, electrification, roads, drainage and sanitation, schools and health care centers are all in short supply. The results of accomplishment of development plans have been much less than what was expected. Serious water shortage and soil salinization has accelerated migration from dried villages to overpopulated cities, have depleted rural areas from their productive population, and endangers the food security of the country.

Non-participatory projects with high costs and low returns have led to sub-optimal investment and inappropriate allocation of resources in the economy. Top-down planning, without active contribution of rural

populations has been the major cause of corruption in the process of project implementation, and mismanagement in conservation of water and soil resources and infrastructure maintenance. In Iran's sluggish economic situation and unfavorable business environment, the private sector is not interested in productive investment in the agricultural sector. Challenges of serious water shortage, escalating unemployment and underemployment, expansion of low-paid and insecure jobs, and increasing concern about economic and social costs of rising poverty, force governments to react to these problems by effective policies.

The Iranian government confronting with water crisis and poverty expansion in different parts of the country has to implement policies to combat natural resources degradation and simultaneously provide safety net for vulnerable people in water crisis-stricken areas. Public works programs, with special emphasis on watershed projects, can be a strong means to mitigate water and land problems, by active participation of local beneficiaries. Such projects help local communities to conserve their own natural resources and in the meantime create short term as well as sustainable employment opportunities.

Watershed projects, through public works programs, can improve water productivity by reducing water waste, improving irrigation efficiency, and protecting underground water resources. Labor-intensive public works projects, such as renovation of agrarian and farm drainage systems, cultivating forest, building small public facilities and repairing public utilities, community centers and welfare institutions, roadside cleaning and rubbish collection, can increase water and soil productivities and simultaneously generate huge employment opportunities in deprived provinces. Common and orchestrated effort of all stakeholders is a fundamental issue in rural development. Local beneficiaries with collaboration of government officials and NGOs can design and implement public works projects that are designed to meet the most urgent community needs.

At first stage, public works programs can be implemented in provinces that are mostly hit by water crisis and have the highest unemployment, underemployment, and poverty records. Government is capable to finance the schemes to create between 500,000 and 1,500,000 temporary jobs in small projects, using less than 0.5 percent of Iran's GDP.

Setting the appropriate organizational networks for applying public works projects is a difficult task, given the inefficiency of government bureaucracy and the weakness of NGOs. There is also the risk of abuse of resources. Without active participation of the main beneficiates of

watershed development projects, corruption in the process of design, implementation, and supervision, then low quality of projects and poor maintenance of built infrastructures becomes inevitable. Hence, experiences of public works in Argentina, India, and other countries in developing world, create hope and optimism that similar programs can be applied in Iran to promote social cohesion and economic development. Otherwise, by continuing the current unfavorable economic trend, Iran will face serious water and labor market crises in the near future that can threaten its social and political stability.

Notes

1. Qanat is a set of joint wells. Wells are sunk every 20–50 meters and an underground tunnel is built to link the wells on a slope from higher ground. Groundwater flows naturally down the tunnel till it reaches a surface point at the end.
2. Since 2010, the government pays 450,000 rials to every Iranians to compensate energy price increase.

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CHAPTER 6

Can Capitalist Modes of Production Be Biophysically Sustainable?

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Environmental Economics rooted in the neoclassical paradigm is ineffective and problematic. Viewing environmental degradation as simply a market failure has a distributional effect which disproportionately harms those with lower incomes and causes inequality. The mainstream anthropocentric approach, such as environmental valuation based on cost benefit analysis and willingness to pay models, is unlikely to assess the intrinsic value of nature, but reflect only nature's perceived market value. This chapter offers an alternative to the mainstream paradigm. I examine the heterodox approaches to the environment for their compatibility with a truly sustainable development path. The chapter begins by looking at the similarities and differences between Post Keynesian (PK), Institutional Economics (IE), and Ecological Economics (EE), and the efforts that have been put forward to bridge the differences. The second section provides an analysis of why a capitalist mode of production might not be compatible with these alternative approaches. The third section introduces philosophical paradigms of other socioeconomic forms that could be more consistent

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with sustainable development. The last section presents conclusions and recommendations.

6.1 The Common Grounds and Differences

6.1.1 Common Perspectives

Arild Vatn (2009) argues Post Keynesian economics, Institutional Economics, and Ecological economics all have similarities which start at the ontological level. "All three traditions are system-orientated, emphasizing relations aspects, hence understanding the motion of system as dependent on the relations between the parts." Their similar methodological frameworks can be shown in these three aspects: they all adopt a nondeterministic approach to the complex system, all recognize uncertainty in our world, and all use historical time in their analysis.

Today, Post Keynesians share Keynes' belief that the economy cannot be studied in a vacuum; it must be studied in relation to society. Downward (2000, 2004, 2001) argues the critical realism, deduction, open-system approach employed by Post Keynesian and Institutional Economists is superior to idealism, induction, and the closed-system approach of neoclassicals. Critical realism encourages the use of empirical and qualitative studies, it rejects generalization. Therefore, theories based on this methodology should be more descriptive and nondeterministic. The methodology allows a place for describing the reality of the environment, which is very complex, and impossible to understand all the variables. The factors determining access and allocation of resources can be attributed to power relations, psychology, habit and thought, rule following behavior, and cannot be deduced to monetary cost and benefit analysis. The open system is also significant for taking into consideration agents, who are embedded in the organic social contest, thus the ecology. It is shared by all three schools that there is an interconnection and interaction among the natural, social, and economic spheres. The economy draws from the ecology which surrounds it, and the economic also react back on the ecological (Mearman 2009, p. 33). Human preferences, technology, and resources co-evolve to reflect both ecological opportunities and ecological constraints (Costanza et al. 1991). This way, society and nature can be continuously evolving. An open system also does not presuppose the

event-regularities, and is consistent with uncertainty that exits in reality and present in the Post Keynesian theory.

Keynes recognizes that we simply don't know the future. The significance of uncertainty is clear when disconcerting issues relating to the environment, we have only one earth, there is nowhere else to go (Scott 2009, p. 106). To an extent, the components of the natural and social system are treated as endogenous. They are determined by forces from within the system (Forstater and Murray 2010, p. 154). Viewed in this manner, Post Keynesians focus on non-economic factors, and study their feedback effects on other variables. The principle of circular cumulative causation relies on the Post Keynesian's assumption that the economy be viewed as a non-ergodic, historical process (Davidson 1972). In historical time, decisions made today cannot be reversed in the future, and economic decision not only affects the economy, but also the large environment that supports it (Scott 2009, p. 107). The future of technology is uncertain; we do not know if we will be able to find ways to employ resources from other planets in the universe before it is too late, therefore it is essential to take measures to ensure environmental protection.

Post Keynesian economics, Institutionalist, and Ecological Economics all emphasize the view that production rather than exchange is central to economic analysis (Gowdy 1991). Focusing the exchange sphere, and overlook production is to accept the initial endowment and distribution of resources, and dismiss the underlying class conflict and power relations, which are addressed in all three schools. In the case of Ecological Economics, the main focus is on how power relations influence access to resources and the distribution of risk. The effect of environmental degradation has always been uneven; the mainstream solution by internalizing costs, and monetizing environmental capital and pollution can only guarantee that the wealthy will have money to pay for the tickets onto the Ark of Noah, leaving the poor to face the end of the world. From a Post Keynesian perspective, the emphasis of production has been a major tenet since the work of Sraffa (1960) who developed a non-neoclassical theory to production and exchange. For Post Keynesians, output is based upon effective demand, and prices for the final goods are based upon normal costs (Lee 1998). From a Post Keynesian view, the system of production and distribution, including the distribution between wages and profits can be represented through input-output relationships of production. Pasinetti's analysis of vertically integrated sectors may be

extended to include primary inputs of energy, natural resources, and environmental services (Gowdy 1990). For example, Costanza and Henrendeen (1984) have extended the model of physical input and output to tracing energy flows. Costanza (1980, p. 1219) argues an embodied energy theory is at its base a cost-of-production theory with all costs calculated in terms of the solar energy necessary directly and indirectly to produce them. This type of analysis not only recognizes the ecological limitation on production inputs, but is also consistent with the mark-up pricing model used by Post Keynesians micro-theoreticians. Rhymes' model includes elements of Georgescu-Rogen's flow-fund model by including the biophysical constraints such as the flows of the stock of nonrenewable resources and including the assimilative capacity of the environment (Gowdy 1990, p. 81). The input-output framework has also been used by Daly (1968) and Daly and Cobb (1989) to incorporate the environment, and to illustrate the interdependence between human activity and the environment, hence to develop an alternative to GDP-the "Index of Sustainable Economic Welfare", which builds upon National Income and Product Accounts (NIPA) to include the cost of environmental degradation.

6.1.2 Difference: Growth

Following Keynes, Post Keynesians realize that insufficient demand requires some form of public spending, whether by war, waste spending, or other means, to maintain full employment and stable prices. This view has no place for environmental problems and resource constraints. The negative attitude toward growth sets ecological economics at stark contrast to the other two. The pursuit of growth was based on the belief that if the total pie is bigger, then without changing the distribution, everyone will be able to get an absolute bigger amount. The problem with growth is well summarized by Domar "the whole problem is that the increase in income is temporary and presently peters out, while capacity has been increased for good. So far as unemployment is concerned, investment is at the same time a cure for the disease and the cause of even greater ills in the future" (1947). To Keynes' defense, he was writing in a very difficult time, confronting the very urgent issues of unemployment of labor and resources. That said, Keynes also had a long-term vision of a just society, where investments are nationalized, capital goods are made so abundant that the evils of

capitalism evoked by scarcity would disappear (Keynes 1936, Chap. 24). This vision was further detailed out in his 1930 essay, where Keynes contrasts relative need with absolute need. Relative need may be insatiable however absolute needs can be satisfied sooner than we are aware of, and when that point is reached, we prefer to devote our energies to non-economic purposes, and to exalt distasteful human qualities, such as the love of money, into a position of the highest virtue (pp. 96–7). Post Keynesians, have an empirically grounded, open system analysis, recognizing the complexity of a dynamic economic system. As such, the Post Keynesian school is best suited to admit the physical limitation on growth and restructure their view and policy suggestions to incoporate environmental concerns. However, up till today, except these few Gailbraith, Georgescu-Rogen, and Boulding, Post Keynesians seems to have forgotten Keynes's long-run vision, and fail to practically address the embeddedness of the economy within an ecological framework.

Ecological economics recognize biophysical constraints to the extraction of natural resources and intra-generational sustainability; and Post Keynesians are primarily concerned with closing the insufficient effective demand gap and dealing with the Harrod-Domar growth problem; meanwhile Institutionalists are emphasizing the role of technology and the fact that resources are socially constructed. Resources are not, they become (De Gregori 1987). Resources are created from the "neutral stuff" of nature and they become useful because of discovery and knowledge into their uses. Discovery and knowledge of resources' usefulness are combined with technologies which allow for the extraction, and production of natural resources into a usable form (Dugger 1996). In a way, knowledge is the mother of all other resources, hence they are not scarce, and it is an evolving concept because our knowledge evolves, society evolves. Many ecological economists like Duchin (1998) regard technology as the "fundamental determinant of the impact human society has on its environment (p. 29)". She argues that "environmental consequences of technological choices and technological change are as important as their social implications (p. 32)". The belief that technology will develop quickly enough to solve any environmental problems that may arise, fails to realize that productivity increase undeniably blown away crushed Malthus's pessimistic world end predication, but neither did it transform into Keynes's vision of reduced work hours or a society devoted to "non-economic purposes".

6.2 Can Their Different Views on Growth Be Reconciled?

Spash and Schandl (2009) argue attempts made by some heterodox economists to include aspects of the environment, such as adding the concept of natural capital, green accounting, and adjusted GDP measures without any major disruption to the theoretical approach or the fundamentals of the system itself is totally inadequate. "Capital accumulation, innovation, technology and growth remain unquestioned in a framework expanded to market trading and monetary valuation of everything from human life to carbon atoms in the atmosphere" (2009, p. 49). While it should be noted that significant effort has been paid by Post Keynesians and Institutionalists to bridge the difference and to substantially change the perspective on resource scarcity and growth, it is also my view that the inclusion of environmental capital and costs is inadequate and ad hoc, because not all costs of environmental draw down can be evaluated and placed in an economic model, and not all environmental capital can be assessed in terms of money.

For ecological economists, and many classical economists, an economy need not to have growth, in fact it could very well stay at a stationary state or a steady-state economy as called for by Daly (1977). David Ricardo held the view that as the economy develops, reaching a steady-state was an inevitable result. Mill wrote in 1857 "I cannot … regard the stationary state of capital and wealth with the unaffected aversion … I am inclined to believe that it would be, on the whole, a very considerable improvement on our present condition" (quoted in Daly 1977, p. 14).

Daly's steady-state economy is one with constant stocks of people and artifacts, maintained at some desired, sufficient, but low level of throughput (Daly 1977). Recognizing the entropy law, the measure of unavailable energy of a thermodynamic system, (Georgescu-Rogen 1993, p. 77) which was originally incorporated into the study of the relationship between the environment and the economy, the matter going into economic production is useful raw material, while that coming out is useless waste. Thus it is important to keep the throughput low.

Kenneth Boulding in his famous 1966 paper "The economics of the coming spaceship earth", made an analogy of the earth system to a spaceship. He acknowledges the earth as a closed system as supposed to an open system portrayed by the mainstream economics, which is often made anal-

ogous to a "cowboy economy". "Open system" in the neoclassical sense means that there is no limits to growth, just like the cowboy treatment to the environment at the western frontier, exploit as they go, but still have unlimited land left for discovery. Scott (2009) appraises Boulding for viewing the planet as a closed system like that of a spaceship. If population growth, waste disposal, energy, and resource usage are not monitored, the environment can become unstable and potentially inhabitable, leading to extinction. I agree with Scott that for the purpose of it, a closed-system analogy is helpful at warning us against over-exploitation of the ecological system, but I propose a more comprehensive view of the earth system as an open system with limitations.

> Thermodynamically speaking, humans as living creatures are open systems. To maintain their physical structure, people exchange matter and energy with their environment. Humans live in a closed terrestrial life support system known as the biosphere. The biosphere is basically a closed system in terms of matter, but an open system in terms of energy. (Eckart 2002)

> Biological systems obey the laws of physics and chemistry and, in particular, the thermodynamics of open systems. These are also highly organized, hierarchical systems. (Open-systems thermodynamics (biology), 2006)

Daly, Georgescru-Rogen, and Institutionalists have long seen the similarities between biology and economics, and made the analogy between metabolism and economic process. "In either process, the only material output is waste. The purpose of the metabolic process is the maintenance of life. The purpose of the economic process is the maintenance and enjoyment of life" (Daly 1968). Just like our bodies take food from and give off excrements to the environment, our economy extracts resources from and discharge wastes back to the ecosystem, our earth also absorb solar energy from and diffuse heat to the universe.

Thus, I am using the term "open system" not in the unlimited resource exploitation sense of the neoclassicals, but in terms of energy flows. Ecological economists have been strongly engaged in analyses of matter and energy flows. Daly (1977), in developing his theory, put this open system in a simple form with solar energy flowing in and heat flowing out. Matter and energy exchanges through the surface of earth atmosphere. Solar energy can be viewed as the only energy inflow, while dissipated energy mainly in the form of heat is released back out to the universe.

Solar energy is accessible as a stock and flow. Fossil fuels are in the form of stored solar energy from thousands of years ago, while wind power, hydraulic power, oceanic activities and many other renewable resources are transformed solar energy flow, created through movement caused by difference in heat. Flow energy is unlimited and yet limited in the sense that at any one point of time, only certain amount of solar energy reaches our planet and can be accessed.

Looking from a historical perspective, whenever nature sets a constraint on growth, whether it is the amount of agriculturally suitable land, the photosynthetic cycle, or the energy supply of coal, mankind has found a way to bypass the obstacles by employing new exhaustible resources though new technologies (Spash and Schandl 2009). Industrialization is the transition from using flow energy to the more extensive use of fossil fuel, which is a capital stock of store-up sunshine and by its very nature exhaustible. Coupled with mass production and insatiable material consumption, the large energy input required for industrialization is in a sense supported only through consuming into the future. Spaceship earth is not a fair representation of what Boulding has said about our economy and the ecology, he recognizes that it would have been impossible to grow at the current rate if we rely on solely the current input of available energy from the sun or the earth itself. He understood that inputs of available energy must come either from the sun or from the earth itself, and then given off by the system in a less available form (Boulding 1966).

Corresponded to the analysis of energy flow, the concept of throughput of the economy is of particular importance in the context of sustainable development. Whether it is in Daly's steady state economy or Boulding's spaceship earth, the primary concern is stock maintenance, meaning the technological changes that maintain the given level of stock with lessened throughput. Or, given the conclusion above, at least at a throughput rate consistent with energy input and output flow rates, which allow the system to self-replenish and sustain. Hence, knowing the amount of stock solar energy and the flow that reaches our earth per second, combined with nuclear energy in the earth core itself, it is possible to calculate the upper limit of the amount of energy that can be used per second on earth. This upper limit puts a cap on growth just like the earth capacity to absorb high entropy heat.

Insititutionalists have always sought out technological advancement as the solution to environmental problems. Indeed, historically technology has proven that Malthusian pessimistic outcomes can be overcome by

technology and increasing productivity. Today technology can also be a potential answer to the energy crisis. It is estimated that enough sunlight falls on the surface of earth every day to meet the world's energy demand for an entire year. Today only 0.2 percent of renewable-generated electricity is produced by solar energy (US Energy Info. Administration Annual Report 2009). The development of nuclear energy has improved the energy situation, but fissionary material is still rare, the future lies with fusion nuclear power. Unlike fission nuclear reaction, raw material for fusion nuclear power can be found in abundance, and the main one being the deuterium isotope of hydrogen, known as heavy hydrogen. 0.03 g of deuterium in nuclear reactions releases the amount of energy equivalent to burning 300 liter of gasoline. It is calculated that out of every ton of sea water, 17.1 grams of deuterium can be extracted. One thousandth of sea water contains enough deuterium to release enough nuclear energy to support human energy usage for billion years to come. Therefore, it can be seen that as long as humankind can increase our knowledge of converting solar energy for practical uses in a cheaper and more efficient way or safely using heavy hydrogen as our energy source in an economic and controllable fashion, energy is essentially inexhaustible. However, as Boulding realizes in both his original "The Economics of the Coming Spaceship Earth (1966)" and "Spaceship Earth Revisted (1996)", technology can be unpredictable. Our knowledge of solar energy has increased significantly, and we have been able to use it more efficiently than in the past, but we haven't gotten too far up. The technology is only fine for hot-water heating, and moderately fine for space heating, which only accounts for 20 percent of our energy use. It looks very expensive for electricity in spite of the tremendous advance in photovoltaic cells (ibid). The capricious nature of human knowledge is a double-edged sword; it could also mean a high possibility for significant improvement in the future. Even if neither one of them work out, we still have the whole universe to exploit, space colonies are no long merely science fiction, moving material through empty space requires very little energy.

Do these possibilities challenge the existence of limits to growth? Boulding answered that question too in *Spaceship Earth Revisited*. "Going into space … is outrageous, but no more outrageous than the whole process of evolution … if anything goes wrong, by the generalized Murphy's Law, every system has some positive probability, however low, of irretrievable catastrophe. Evolution is able to persist on the earth because of the

isolation and variety of its ecosystem" (1996). We don't even need to look too far into the history to see footprints of isolated regional catastrophes that destroyed advanced civilization when nature's carrying capacity is exceeded, and the balance of the ecosystem disturbed. Examples include Easter Island, once occupied by some of the tallest palm tree species, an ample variety of sea birds and fish, and advanced Polynesian culture, which was intelligent, well equipped, well fed and populated enough to architect giant stone statues (statues that are tricky to erect even with today's modern machinery), to a deforested landscape with only 111 native islanders at best, and no vegetation that is tall enough to be considered a tree. From the once prosperous cities of Maya with lavish monuments and art to the complete collapse of the civilization. Maya population overloaded their natural environment, which led to severe droughts, and wars broke out as competition for limited resources became fierce. The ancient decline of Anasazi culture is the closest to home for Americans, with Mesa Verde National Park lies on New Mexico state Highway 57 and US Highway 666, but its story is not much different from that of Maya collapses, likely be caused by droughts and human impact on the environment combined. Rwanda's genocide, Norse Greenland's end, the tale of one island, two peoples-the Dominican Republic and Haiti, the list goes on, and if we look into more recent history, many modern societies are repeating the tragedies of the ancient ones: China's environmental problems with air pollution, water imbalance, soil erosion, habitat destruction, biodiversity losses and megaprojects, or Australia's land degradation, marine overfishing, and invasive species intrusion. These catastrophes fortunately have been isolated, so to not bring down the whole system, but they are all vivid examples of societies that destroyed themselves by overexploiting its own resources. Up till now, I've only discussed the shortage of resources used to generate energy, while our ecosystem is losing other important resources such as natural habitats, wild food sources, biological diversity, and soil. We are also omitting ceilings on not just energy, but also freshwater, and photosynthetic capacity. Before ever getting to the these ceilings, we are confronted with the more immediate problems of toxic chemicals, alien species and atmospheric gases being generated everyday around us (Diamond 2005).

As I've discussed above, the terrestrial life support system we live in, is known as the biosphere, is a closed system in terms of matter, but open in terms of energy. If water, oxygen, and carbon loops can be closed using bioregenerative means, a closed ecosystem is obtained. Although closed

ecosystems in space are theoretically feasible, they will not become a reality in the very near future (Eckart 2002). Hence, the bottom line is, even if technology can stretch natural resource exhaustion, once the ecosystem is ruined, the consequences are irreversible and disastrous. It would be impossible for human beings to restore the natural biosphere with the existing technology. Every organism serves its purpose in our ecosystem, whether we know about it or not, it feeds into the system of interdependent and interconnected relationships. What this tells us is that there are absolute limits to growth, even if resource exhaustion, heat absorption, pollution, can all be postponed or even treated with technology, the disruption of the biosphere and our life supporting system will be unalterable. Humankind will have no place to flee. After all, "the human species is a part of the larger biosystem of the planet Earth, and is ultimately subject to the same laws and limitations as other life forms" (Gowdy 1987).

While some use technocratic determinism as the response, others recognizing the limits to growth, responded with fundamental changes in the economic system. Daly proposed to develop a comprehensive arrangement controlling the input of natural resources into the economy (1996). Others have emphasized the need for altering the more fundamental motivational structures of the economy. This may imply less room for the profit motive and more emphasis on cooperative structures. Vatn poses the open question: can these changes be made by macroeconomic planning, like the one proposed by Courvisanos using public investment control to facilitate necessary innovation (2005), or by changing the rules and regulations of corporate business, like the institution of the Environmental Protection Agency (EPA), or by instituting social rationality as a basic element of business motivation, like finding ways to break the logic of consumerism, and finding ways to establish identity and meaning outside of that realm?

My response to the question is that none of those approaches can be effective under capitalism. For one, a capitalist economy without the profit motive, the worship for money, is no long capitalism. Consumerism is an inevitable side-effect of capitalism, because the pursuit and love for money is what is driving pecuniary emulation. With class conflict and power relations at the center of a capitalistic economy, conspicuous consumption is simply a byproduct of the class system. Some have argued that "ecotainment" might have a good potential at least to the early state of a consumer behavioral change process, but there are numerous pitfalls associated with the approach (Reisch, et.al). The socio-psychology of consumerism could

be diminished, but it is unlikely to be eliminated without a change in the basic economic structure.

Post Keynesians see government as the savior, regulation as the central policy tool for solving problems in a capitalist system and keeping new ones from occurring. "Only government has the overarching authority, and capability, to adjust the system toward sustainable, eco-friendly, growth" (Rosser 2001, p. 57). EPA is an example of an organization designed for the benefit of everyone. The problem is that social investment and government regulations are constantly under threat from free-market forces. Large corporations can manipulate the state to "define public interest in their own light. They have the power to control prices and the resources to mold public opinions. Consumerism is then an artifact of their power, used through advertising to equate happiness with purchasing private goods" (Spash and Schandl 2009, p. 68). Anarchists (discussed later) have long stressed the danger of a centralized government turning into a totalitarian regime; there has always been a complementarity of interests between capitalist corporations and the bureaucratic state (Morris 2001, p. 346). Adam Smith saw the emergence of the state, and saw clearly what it was created for.

> the rich, in particular, are necessarily interested to support that order of things, which can alone secure them in possession of their advantages … Civil government, so far as it is instituted for the security of property, is in reality instituted for the defense of the rich against the poor, or of those who have some property against those who have none at all. (quoted in Heilbroner, ed. 1986, p. 150)

Echoing Shumpeterian innovation (1949), Marxists, like Resnick and Wolff (2006), have also argued that corporations will find ways to go around regulations, making them merely ceremonial gestures rather than regulatory constraints. Therefore, government intervention will likely be either bureaucratic or ineffective.

6.3 Alternative Paradigm that Might Be Better-Suited for the Task in Hand

Daly's vision of an optimal steady-state economy could be possible if we are not in an M–C–M'[1] economy, where the money motive drives society to infinite growth and material consumption, but in one with a high degree of communal governance, respect for life and nature, and pursuit of spiritual

enrichment. For a society to improve the standard of living without adding to the stock of human artifacts disrupts the biophysical condition. The socio-psychology needs have to be diverged from materialism/consumerism toward sustainable consumption; from the view that work is a necessary evil toward a means to nourish our mind and soul; from using money as the measurement of fame, success, and well-being toward focusing on the development of human artistic creativity; from self-interest motivations toward altruistic behaviors. Many times, we linger on the beautiful scenery on the side of the road without thoughts of reaching the journey's end. The end in this case is human well-being, or simply happiness, consumption is merely a means to an end, we should strive to attain happiness with the minimum means, rather than be lost in the fantasies on the passage, and overlook the destination. I'm not sure whether an economy without the money motive, without the materialist aspiration, without hedonistic calculation, and without infinite growth can still be called capitalism; but the existence of such a society is plausible, and indeed compatible with many other philosophical paradigms, such as Buddhism, Daoism, anarcho-communism and to some degrees, even Keynes' own vision of a "post-capitalism". I shall point out that this section is not meant to be conclusive, but to simply suggest possible resolutions by surveying the alternatives.

While each paradigm practices a different set of principles, all of them celebrate life rather than lifeless goods, creative activities rather than mechanistic work, dependence and interconnectedness of systems rather than independence, and human supremacy and spiritual enrichment rather than material craving, liberation and democracy rather than enslavement and hierarchy, and most importantly human's associative, federative, and benign tendency rather than the individualistic, selfish, and malignant bent. While they, to some degree reject mechanic automation, or at least post concerns for the danger it might have on human faculties and characters, they do accept modern technology that involves the smallest input of toil to maintain the same stock. Their beliefs are the less toil there is, the more time and strength is left to be devoted to non-economic purposes. Though, Keynes warned us that "For at least another hundred years, we must pretend to ourselves and to everyone that fair is foul and foul is fair; for foul is useful and fair is not. Avarice and usury and precaution must be our gods for a little longer still. For only they can lead us out of the tunnel of economic necessity into daylight" (1930, p. 97). The important difference here is, these paradigms view technological advancement and even periods of economic growth as means to an end, not an end in itself.

Buddhist sees the essence of civilization not in a multiplication of wants but in the purification of human character, which is formed by a man's work conducted in conditions of human dignity and freedom (Schumacher 1973, p. 41). It is wrong from the beginning to view work as disutility for workers, who are compensated for wages, or as costs for employers, who must strive to eliminate altogether, say by automation (ibid, p. 40); they fail to see work provides satisfaction, defines who we are. The keynote of Buddhist economics is simplicity and peace, and simplicity brings peace. Today, economists pursue economic growth as the highest of all values, consumers identify and represent themselves with what they buy, products are made ever more disposable and with more wasteful packaging. It was believed by Keynes, Marx, many political economists, and utopians that economic growth would bring about a universal rise in standard of living, and when stomachs are well fed, and a roof over the head, we can then engage in self-actualization and exercise our higher being. Though it is despairing to see that modern society, despite its technological advancement, productivity increase, job creation, has failed to address inequality, has not been increasing our happiness, and left still many more in poverty. If we shall be reminded of Keynes's vision for the future, rather than leading us "out of the tunnel", we seem to have lost our way in the darkness due to the pretense that foul is fair and fair is foul. Keynes believed that there is a point where all of our absolute needs can be satisfied, but where is that point? Buddhism gives us the answer to how much is too much question. Buddhist economics teaches us that the attainment of universal prosperity is possible on the basis of the materialist philosophy of "enrich yourselves", and this road leads us to peace (Schumacher 1973, p. 12). For Buddhists, what makes a man rich is not how much gold or money he has, but the internal enlightenment oneself achieves. Through gaining wisdom, Buddhists pursue the ultimate truth, which gives a purpose of life and enriches them spiritually and emotionally. This teaching of self-enrichment, contentment and appreciation for life and the livings is well suited with the concept of steady-state economy and ecological sustainability. Also the nonviolent teaching of the Buddha identifies human life and the economy as a dependent part of an ecosystem of many different forms of life, therefore, rather than viewing the economic and ecological as separate spheres, they recognize the embeddedness of the economy and its emergence from the ecological. Schumacher talks about how followers of Buddha plant a tree every few years and how they distinguish between renewable and non-renewable materials, the former must be consumed within its assimilative capacity and the latter must be used as indispensable (ibid).

Buddhism is not alone among eastern philosophies to bare the teaching of simplicity and harmony. Namely, Daoism is a particular one that preaches the balance and tension between the opposite forces—yin and yang (shaded and sunny). Dao can be translated to "way" or "path" in English, but it is the essential concept which refers to the natural/cosmetic forces that make the universe the way it is. Daoism is unique in the sense that it is non-theistic, and there is no place for deity, because the power exists in the nature, among the mountains, rocks, rivers and trees, and into the clouds. Nature taught us to avoid violence, to embrace harmony, to love and learn and we must live in peace and balance with the universe. Trying to conquer nature or improve it is futile, and is the source of suffering, which implies that technocratic domination over nature can only result in the opposite of what is attempted to. Humans are essentially good and can enjoy a good life in the world, but get into trouble when they depart from the simple, natural way of the universe. Similarly to anarchism, Daoists understand that life and food come from the nature, but they take it a step further to believe that it must be returned to the nature. Men do not simply die, but are rather reborn into other forms or return to the "ultimate reality". If I may make a parallel to the movie "Avatar", the indigenous people of Pandora also believe in the giving and taking of the nature. They do not celebrate the death of their hunted prey, but thank them for giving up their lives and thank nature for giving them the food, and when they die, they are just giving back what they've taken from the nature, and in that way, the balance is sustained (Vlach 2011). It suggests that infinite growth will break the nature's balance and will lead to more suffering; human-made capital simply cannot substitute environmental capital to provide ecological services at the same scale. To that end, Kahn and Rivas provide good examples related to the Mississippi system: the massive flood of 1993 and Hurricane Katrina. Both devastating events were caused by the loss of nature's flood control system—coastal wetlands, and the inability of human-made flood control services—levees and dams (two engineered ecological services that best replicate nature) to provide the same degree of protection (2009, p. 263). It is not hard to see how a philosophy that places nature at its center can be compatible with ecological economics, which also appreciate the value of lives other than human in the ecosystem and thrive to sustain the natural state and reproduction of our biosphere.

Anarchism is often mistakenly understood as a state of chaos, because of its repudiation of the state and capitalism; but what is meant by state is "quite different from the idea of government, it not only includes the existence of a power situated above society, but also of a territorial concentration as well as the concentration of many functions of the life of societies in the

hands of a few" (Kropotkin 1975, p. 213). Unlike Post Keynesians, who see heavy government intervention as the solution to insufficient demand, hence full employment and growth, anarchists realize that a strong state is only in place to defend and extend property rights of big corporations, and to legitimize capitalist social relations (Holton 1998). No state is not the equivalent as no governance, indeed, just like the Buddhists and Daoists, communitarian anarchists place their faith in people's benevolent nature, particularly, their associative and federative tendencies and their propensity to form communal groups of cooperation and solidarity (Knowles 2000). As Mies noted "The notion that humans are by nature competitive, aggressive, acquisitive and self-centered-ignoring the fact that humans are also caring, altruistic, loving and generous. Private property is thus not an expression of human nature" (quoted in Morris 2001, p. 348). However, the competitive, profit-seeking capitalism corrupted the nature of laborer and work, it also corrupted character of social relationships … capitalism means best pursuing your own advantage at the cost of someone else's loss (Thompson 2006, p. 9). "Morris pointed in particular to the environmental consequences of the rapid and uncontrolled industrialization that the self-interested pursuit of profit had brought about" (ibid). Recognizing the authoritarian dangers implicit in the centralization of ownership and power in the hands of the state, they advocated for a small-scale moneyless economy, characterized by craftsmanship and artistry, and a subsistence perspective, where the economy must be embedded in social life as a moral economy based on self-reliance and autonomy, mutual aid, and subsistence trading. Their view on the nature of work is analogous to the Buddhist, that is to bringing out the creative capacities of humanity. For example, Morris criticizes capitalism for degenerating "joyful labor" into "useless toil"; for condemning labor from "the intelligent production of beautiful things" to "vulgarities and shabby gentilities" (Thompson 2006, p. 8). Anarchists recognize work as an important source of satisfaction, creativity, and self-affirmation, so they reject the wage system and all exploitative forms of labor (ibid). Ruskin argued that there could be no enjoyment to be had from production made under modern factory conditions, and that it obliterated the better part of the workman—his thoughtful art (Mass 1999, p. 87). This concern had been seen as early as Adam Smith's writing of the pin factory, that the division of labor might take away the active part of workers' inventiveness, imagination, genius, and ingenuity. On the issue of when is enough, like the Buddhists, as well as Smith, Marshall Keynes, and Veblen, they distinguish human wants from needs. Our wants are infinite, (the kind that Keynes termed the "relative need" or what Thorstein Veblen (1909) calls "pecuniary emulation"),

whereas all our basic needs for food, shelter, clothing, and warmth are not insatiable and can in fact be satisfied here and now. Buddhism can fill in the blank here to provide the inner richness once basic material needs are satisfied. These core beliefs make communitarian anarchism compatible with ecological sustainability, for both realize that economic growth and technological innovation are not the answer to all our problems. There are limits to growth, and technology should be consonant with "subsistence logic" rather than the logic of capital accumulation (quoted in Morris (2001), p. 60).

In effect, the benevolent human nature is believed by the above three paradigms alike, but capitalism destroyed the possibility of human fellowship. "Keynes wanted to solve material needs using capitalism, and worry about dismantling the system later—a worthy desire when many starve and suffer from poverty; but as 80 years of intervening growth have shown, growth alone achieves gains for the few not the many" (Spash and Schandl 2009, p. 66). Sustainable growth is an impossibility theorem, sustainable development and equality under capitalism is an oxymoron. A just world in Keynes's post-capitalist vision requires the removal of money and profit motives, the goal of equality, harmony with mankind and nature, and a transition requiring human, social, institutional and behavioral changes.

Notes

1. M-C-M' is Marx's notion of the particular form of the circulation in a capitalist system. It represents the transformation of money (M) into commodities (C), and the change of commodities back again into greater sum of money (M'), thus the intention of such circulation is buying in order to sell dearer.

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CHAPTER 7

Complementary Currencies in the Solidarity Economy: The Local Job Guarantee

Mathew Forstater

According to neo-chartalism, a non-convertible floating currency is a monopoly of the issuer. The issuer has not only the power to impose debt obligations, but to designate what is acceptable to settle those obligations, what it will accept at its pay offices. In this way, the issuer can create a demand for otherwise worthless bits of paper, leading to general acceptability. The monopoly issuer can use its own monopoly money to purchase goods and services, including labor-power. These and related powers constitute a menu of instruments that may be used to conduct policy based on the principles of functional finance (Forstater 1999). Under such a system, the issuer's budget may be freely used to promote job creation and other socio-economic goals.

Such a system crucially depends on a one-to-one correspondence between money and the issuer, and only with such a strict correspondence does the issuer's debt become truly riskless, enabling the issuer to buy anything for sale—and settle any obligation—denominated in the unit of account (Goodhart 1998). When communities forfeit their monetary sovereignty and the strict correspondence is severed, as in the current structure

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of the European EMU, they do face financial constraints, and currency risk is replaced by default risk.

In 2012, I visited Italy to speak about the European crisis. The options for real change considered by the panelists included: (1) exit from the EMU by Italy or other individual member nations; (2) radical reform of the structure of the monetary union (or the use of "emergency" measures hidden in the fine print), for example, seriously increasing the deficit-GDP and debt-GDP ratios, zero-interest or low interest (or negative nominal interest!) loans to individual nations; (3) an end to the monetary union and a return to national currencies; and (4) the creation of a fiscal authority at the Euro level to work in concert with the ECB, that is, a "United States of Europe" (Kregel 1999). During the discussion period, a young audience member asked, "So, short of waiting for the politicians in our countries or the bureaucrats in the EU to implement changes they lack the will and/or the power to undertake, is there nothing we can do to help the unemployed and their families in our cities and localities?"

While a second-best solution, because they will still be operating within the constraints of the monetary union, we proposed communities consider issuing a form of complementary currency (CC) quite consistent with neo-chartalist principles, and that a local job guarantee (JG) program be implemented to employ the unemployed in community service jobs. In fact, the general idea of alternative currencies is not one that is new in Europe. In addition, the proposal is one that could be applied in other contexts where a full-blown national JG is not possible, either due to the constraints of some type of fixed exchange rate (whether a peg to another country's currency or a monetary union) or because of political obstacles.

In the USA, for example, proposals for a job guarantee have been put forward as national policies due to the flexibility the federal government has in paying for the program. This flexibility stems from the ability of the Treasury and the Central Bank to work in cooperation to implement fiscal and monetary policies. There are many obstacles, however, to government policies at the federal level, including political, administrative, legislative, and ideological. An alternative route to job creation at the local level would be to use a complementary currency to pay for community service employment. In this way, cities, counties, or states that are currency users in terms of dollars can become currency issuers in terms of the complementary currency. In addition, this form of local financing dovetails nicely with the focus of most job guarantee proposals on local administration

and management of JG activities by local governments, non-profits, and NGOs. There are numerous other potential benefits of the local solution for individuals, families, neighborhoods, communities, and regions (Forstater 2013). It is possible that the benefits of a well-managed local currency may mean its implementation is desirable even in communities within a nation operating a neo-chartalist monetary system and managing its budgets according to the principles of functional finance (including a job guarantee), and during prosperous times and not only in the event of a crisis.

7.1 Money, Employment, and Complementary Currencies

When there is unemployment, jobs and money, not resources and goods, are scarce. In a full-employment economy, there is a sense in which resources are scarce. Economizing is important, as resources can only be allocated to some use if they are removed from another productive activity. In an economic system with unemployment, however, resources are not scarce, as production may be increased by employing the unemployed resources. But there are other kinds of scarcity in the economy suffering from unemployment: "What is scarce is money. The lack of money to spend on the goods is what keeps the unemployed resources from producing more goods" (Lerner 1951, p. 147).

Historically, many complementary currencies appeared during times of economic crisis, when money was not adequately available. If the amount of national currency was not sufficient to meet the community's needs, they would simply create their own. During the Great Depression, there were dozens, if not hundreds, of cases of local currency, just in the USA (Gatch 2011). In Europe as well, numerous complementary currencies appeared during the Great Depression, and many exist there today.

The contemporary literature on complementary currencies acknowledges and accepts the central insights of chartalism and functional finance. Bernard Lietaer and Jacqui Dunne, in *Rethinking Money* (2013), write:

> [A] sovereign government does not really "need" to raise taxes to pay for its expenses. Once this is understood, it becomes clear that neither taxes nor government bonds "finance" government spending. Instead, taxes are required to give value to money. (Lietaer and Dunne 2013, p. 27)

In *People Money: The Promise of Regional Currencies* (2012), the authors state that "[i]f the authorities want to encourage regional currencies, so that their full potential can be realised, the most effective way of doing this would be to accept them in payment of specific taxes" (Kennedy et al. 2012, p. 68).

Lietaer and his co-authors, in *Money and Sustainability: The Missing Link* (2012, pp. 133–138), cite authors such as Wray (1998), Mosler (1994), and others in support of what they call the "Fiat Currency Paradigm," which they contrast with the "Official Paradigm" (i.e., the orthodox view). The core characteristic of the fiat currency paradigm, they argue, is that, "the systemic role of taxes is to give value to a currency, which, in the case of a fiat currency, would otherwise have no intrinsic value whatsoever" (Lietaer et al. 2012, p. 136).

Historical analyses of what has been called "tax anticipation scrip" (essentially what neo-chartalists have termed "tax-driven money") in the USA in the 1930s now include references to chartalism (Gatch 2011). Articles analyzing local currencies in journals such as the *International Journal of Community Currencies* and the *Journal of Cleaner Production* likewise reference the modern money literature (see, e.g., Dittmer 2013). Modern money theory has until recently not reciprocated this engagement of the complementary currency literature with neo-chartalism, functional finance, and the JG. This does seem to be changing a bit, however, and there have also been some notable exceptions, such as Peacock (2006, 2013). One of the most important links between chartalism and complementary currencies has been the Buckaroo program at the University of Missouri—Kansas City (UMKC).

7.2 The UMKC Buckaroo Program: A Neo-Chartalist Complementary Currency

When the Center for Full Employment and Price Stability (C-FEPS) moved to the Economics Department at UMKC in the fall of 1999, the department commenced a service-learning program that would encourage students to do community service while learning about modern monetary systems and government budgets. Rather than directly requiring students to do community service, the department created its own currency, called the "Buckaroo." The name of the currency is a play on the words "kangaroo" (the UMKC university mascot), "buck" (a common slang term for a

dollar), and—being located in Kansas City—the word for cowboy derived from the Spanish, *vaquero* ("Buckaroo").

On the face of the Buckaroo is the inscription: "this note represents one hour of community service by a UMKC student," and the note is denominated as "One ROO Hour." The note also has a picture of Thorstein Veblen, the Institutionalist economist who held a position for a time at the University of Missouri, and whose work is closely studied by students at UMKC.

Instead of just requiring students to do service, professors include as part of the course requirements that students pay a tax of, for example, four Buckaroos per week for the semester. Approved community service providers (state and local government offices, public schools, NGOs, and not-for-profit agencies) submit requests to the UMKC Economics Department "Treasury" for student hours and are awarded "special drawing rights" (SDRs) as long as basic health and safety and liability standards are met. Service providers pay students one Buckaroo per hour, which is equivalent to spending by the Treasury. Students pay their tax with the Buckaroo notes they earn performing community service, and the requirement is met when their tax liability is met.

There is no limit to how many Buckaroos a student can earn. Some students will perform more hours of service than that needed to satisfy their tax liability. Buckaroos are freely transferable, so they may exchange for goods and services or other currencies.

Buckaroos are a *floating* exchange rate currency, in other words UMKC does not peg the exchange rate between buckaroos and dollars, for example. Buckaroos are also *non-convertible*, meaning UMKC doesn't promise to convert it to anything, such as gold. The Buckaroo is a case of *public monopoly*, since UMKC is the sole supplier and it is against the rules to counterfeit Buckaroos. The Buckaroo is a *sovereign* currency, issued by a monopoly supplier who imposes a tax liability in its otherwise worthless currency. UMKC only promises it will accept Buckaroos in payment of taxes. The dollar is also a sovereign, non-convertible, floating currency without intrinsic value and operated as a public monopoly. The only promise the US Treasury makes is that it will accept dollars in payment of taxes.

UMKC always runs a Buckaroo deficit, because students always earn more than their tax liability (they lose some, keep some as souvenirs, etc.). UMKC's Buckaroo fiscal deficit is exactly equal to the Buckaroos saved by

the students. The value of the Buckaroo is a function of what the students have to do to earn a Buckaroo from UMKC, and is unaffected by the size of the deficit or the amount of Buckaroo spending by the department. UMKC Buckaroo spending, however, does not depend on collecting taxes. Certainly, UMKC does not need to borrow Buckaroos in order to spend.

A UMKC graduate, Fadhel Kaboub, earned his PhD and left to become a professor at Denison University, where he started a similar program there called "Denison Volunteer Dollars." If UMKC decided it would give up its currency, and join a monetary union with Denison, then UMKC could not pay students unless it collected taxes first, or borrowed DVDs in private markets. UMKC would no longer be a monetary sovereign. It would no longer be a money monopolist. It could no longer continue to run fiscal deficits to create full employment and satisfy the desire of students to save. Denison would tell UMKC it better get its fiscal house in order, and so force UMKC to accept an austerity program.

When Greece, Spain, Italy, and other member nations joined the Euro, it put itself in exactly the same position as UMKC, if UMKC gave up the Buckaroo and joined Denison in a monetary union (or pegged the Buckaroo to the DVD). Before adopting the Euro, the member nations were also monetary sovereigns, and their currencies were also a non-convertible floating currencies backed by the tax system. But when they adopted the Euro, they voluntarily gave up their monetary sovereignty. They are no longer money monopolists. They are no longer a currency *issuers*, but now, like households, they are currency *users*.

Short of UMKC voluntarily giving up its monetary sovereignty, however, the similarities between the Buckaroo and other non-convertible, floating currencies such as the dollar:

> Governments issue money to buy what they need; they tax to generate a demand for that money; and then they accept the money in payment of the tax. If a deficit results, that simply indicates that the population wishes to hoard some of the money. The deficit is of no consequence to the government; it merely allows the population to save in the form of government money. If the government wants to, it can let the population trade the money for interest-earning government bonds, but the government never *needs* to borrow its own money from the public. Taxes and bonds, therefore, have nothing to do with *financing* a government's spending. (Wray 2000, pp. 61–62)

7.3 The Local Job Guarantee

Complementary currencies (CCs), both historically and currently, come in a variety of forms. Some have a fixed exchange rate with the national currency, while others have a rate that is not. Some are based primarily on commitment of the community members to the locality, while others are "tax-driven." Some are issued by NGOs or other community organization, while others are issued by the local government. To create jobs, localities run what amounts to a local Buckaroo program, where the CC is a non-convertible, floating rate currency issued by the local government and is tax driven.

The local government would impose a tax payable only in the CC, say four per household. We propose the tax be imposed on households rather than individuals so as not to penalize larger families. For the program to operate, the CC needn't be accepted in payment of any other tax. The locality will then announce that it is offering a community service job to anyone ready and willing to work, paying one CC per hour. For localities suffering under the economic crisis plaguing the Eurozone, four hours per week of community service is not too much to ask households to contribute to rebuild their economies.

Some households will work more than four hours per week, some will work less. Those who work, say, 40 hours per week, will pay their tax and have 36 CCs left over. Those who are too busy to work in the program (because they are working full-time, for example) will need to acquire CCs from those who have extra. In this way, the CC will circulate in the local economy.

Like the Buckaroo and the US dollar, and unlike the Euro, the CC would be a non-convertible, floating currency. Like UMKC and the USA, the local community will be a monetary sovereign (in terms of CC). Depending on the regional, national, and local laws, the CC may be called something other than "money," but since there are currently hundreds of alternative currencies operating world-wide, there is nothing preventing localities from pursuing full employment in this way (though the legal status may change in different regions).

Interestingly, a similar proposal has been independently put forward in the alternative currency literature. Bernard Lietaer and his co-authors, cited above for their recognition of chartalism, have proposed a local employment program based on a complementary currency they call "Civics" (Lietaer et al. 2012, pp. 174–179). As in the local currency

literature generally, the authors discuss other aspects of the proposal that make sense, such as the advantages of electronic accounting over paper currency, and cases where households may be exempt from the obligation (elderly, those with disabilities).

7.4 Enhancing Community: Other Benefits of Localism

The local job guarantee would have all the regular potential benefits of employment and the national job guarantee, such as increased production of community services, developing skills, utilizing creativity, and countering the social costs of unemployment. The local aspect of the program has additional potential benefits, however, such as those often noted in the local currency literature and other considerations of localism.

The program promotes increased interaction with one's neighbors, and in this and other ways can strengthen community ties. The program therefore promotes mutual aid and reciprocity. Family and neighborhood empowerment follows from a program based on cooperation and local development. Numerous environmental benefits are also possible.

Previously, in addition to arguing that the JG may serve as a vehicle for humanistic social policies, such as a living wage, health care or child care benefits, and a shorter work week, I have suggested that the program might be used to help redefine what constitutes valuable work and also provide spaces for experimenting with alternative, non-capitalist social organization (Forstater 2013). It is possible the JG, and especially the local JG, may be an area for positive collaboration between the public sector and the solidarity economy (sometimes called the "social and solidarity economy," or SSE) (Utting 2015).

Several concepts related to the solidarity economy and that have been little examined in economics are temporary autonomous zones (TAZ), prefigurative behaviors, and heterotopias. A heterotopia also refers to alternative or counter-hegemonic spaces in the present, not some future dream world that will only arrive after capitalism is completely ended (Watson and Gibson 1995). Similarly, many use temporary autonomous zones (TAZ) as creative community alternatives (Graeber 2007). Prefigurative politics (or behaviors or institutions) refer to the principle of behaving now in ways consistent with the future society we want to create, not waiting until that time arrives, and behaving in anti-social ways now (Milstein 2010). In all these cases, the point is that we should not and

cannot wait for the arrival of the imagined future to begin, in fact the alternative already exists, and we must nurture, learn from, and improve upon these. There is much work to be done; some of it might begin in a local job guarantee program that results from a partnership of local or regional governments and the solidarity economy.

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CHAPTER 8

On the Reservation: Toward a Job Guarantee Program for American Indian Nations

Michael J. Murray

8.1 Introduction

Ignorance is bliss. This statement encapsulates the oblivious attitudes toward the economic catastrophe that exists within most American Indian nations. The American Indian economic crisis is easy to miss. American Indians make up less than 2 percent of the total US population (about 1.6 million individuals). Less than half of these (about 700,000 as of 2011) live on (or near) American Indian reservations. The small populations on American Indian reservations are both a consequence of US government policy and a consequence of poverty. Historically, US government policies geared toward American Indians have focused[1] on assimilation, acculturation, and termination. Government policies against American Indian communities contributed to the physical loss of land and property, loss of population, loss of language, and loss of culture. The economic toll of government policies has been—and still is—devastatingly high. Unemployment and poverty on American Indian reservations is among the highest rates in the USA.

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The sheer lack of meaningful economic opportunities contribute to societal problems including school dropouts, criminal and gang activity, substance abuse, and alcohol abuse (Forstater 2002). American Indian reservations are no exception. Nevertheless, perhaps unlike other groups, these consequences become attributed to American Indians as a people, thereby re-enforcing negative stereotypes and igniting negative race relations. There are perceptions of the "lazy Indian," "Indian time" and "Indian cars". These perceptions are so ingrained in some American Indian communities that individuals internalize these character traits (Treuer 2010, p. 73). However, as Treuer also notes, these traits are not predispositions. Unemployment, poverty, and their social costs are not Indian problems; just like, they are not black problems, nor Hispanic problems, nor problems that are uniquely identifiable to any race or ethnicity. These are societal problems. Unemployment and poverty run deeper and are more pronounced in American Indian communities, and are re-enforced because of direct and indirect discrimination of US government policies toward American Indians or simply because of inattention. The socio-economic problems experienced on American Indian reservations are multi-layered and inter-connected. Unlike other minority groups experiencing similar problems, the socio-economic consequences for American Indians include loss of sovereignty, loss of language, and loss of culture.

When the official unemployment rate in the USA rose to 10 percent after the global financial crisis it was called the Great Recession. In a newly released analysis of American Indian labor markets by the Bureau of Indian Affairs (BIA), the 2005[2] on-reservation unemployment rate stood at 50 percent. This is before the Great Recession when the national average U-5 unemployment rate (which includes all those marginally attached to the labor force) stood at just under 6 percent. Staggering rates of unemployment and poverty as witnessed in 2005 are the norm on American Indian reservations rather than the exception. Figure 8.1 partially details the sobering reality of the economic life on reservations.

Given the unique nature of the American Indian experience, here it is proposed to enact a federally funded job guarantee (JG) program as a partial solution to the multifaceted problems facing American Indian nations. The JG program is organized differently than existing federal programs and it offers benefits that address the larger societal goals of American Indian reservations. Mainstream federal programs are geared toward pro-capitalist development. Typically, these programs emphasize

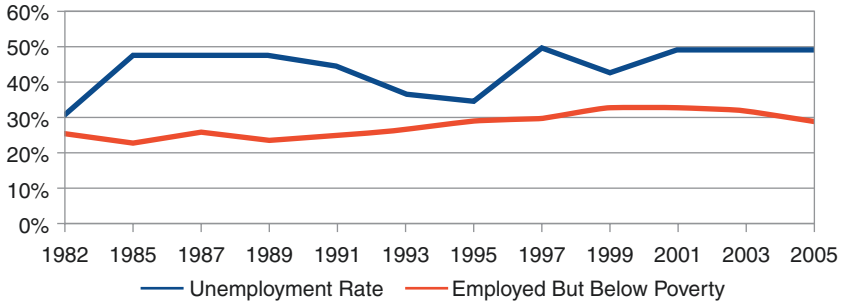

Fig. 8.1 American Indian employed and in poverty and unemployment rates

efficiency (meaning cost minimization and profit maximization production) which entails the development of for-profit, privatized production, and the proliferation of capitalistic development. In contrast, JG programs are non-profit. They emphasize social efficiency rather than capitalist efficiency. The JG program strives toward societal enrichment and community development as much as advancing economic opportunity. Meaning that JG programs are not to be evaluated using the same yardstick as is used by private sector, for-profit enterprises. Rather successful JG programs are measured by their contributions and benefits toward the communities that they serve. Because of these differences, JG programs may be used to encourage non-capitalist forms of development and growth alongside creating an environment for mainstream development of local businesses (Forstater 2013).

This chapter complements the existing literature on the JG. It is part of—what may be called—the *second generation* of JG literature which shifts the focus from the theoretical foundations of the JG to its practical application. Specifically this chapter is an extension of Darity and Hamilton's (2012) study on racial unemployment disparities, the racial wealth gap, and role of a federal JG program to address these concerns. The chapter also extends Wisman's (2010) analysis of the crippling social costs to unemployment, and contributes further to Wisman and Reksten's (2013) discussion on the JG's role in re-skilling and advancing traditional, professional, and technical education and training. Lastly, this chapter furthers Mathew Forstater's (2013) recent contribution which explores the JG program as a vehicle for social policy in capitalist and non-capitalist forms of production.

Beyond contributing to the existing literature on the JG approach to full employment, the specific intent of this chapter is to establish a justification for the enactment of an American Indian JG program in lieu of mainstream approaches. Unlike contemporary, mainstream, pro-capitalist approaches, the focus of the JG program is on creating jobs and developing communities, upholding and re-enforcing American Indian sovereignty, rebuilding American Indian nations, and strengthening American Indian languages and cultures.

American Indian languages and cultural traditions came under direct attack by US government policies of acculturation, assimilation, and termination. The languages and cultures that remain continue to be under attack, albeit indirectly because of unemployment and poverty. The American Indian JG program seeks to begin to remedy the failed policies of the past through direct job creation that also promotes native sovereignty, native traditions, native cultures, native languages, and native religions.

To enact any successful JG program requires identifying the target population and designing a program that complements (or better yet enhances) the skills and education of those enrolled, supports community development, and achieves local initiatives. In this regard, it is envisioned that a well-designed JG program be fashioned by American Indian tribes themselves, and built around their communities' needs and desires. A well-designed jobs program would be one that benefits those seeking employment while providing the greatest external benefits to American Indian communities.

The remainder of the chapter will first examine the dual problems of poverty and unemployment experienced on many American Indian reservations today using American Indian reservations within Minnesota and South Dakota as case studies. Two mainstream development policies have been pursued, the *standard approach* and more recently the *nation building approach*. The chapter first reviews the standard approach which evolved from historical US policies of acculturation, assimilation, and termination to correct the, so-called, Indian-problem. These historical accounts serve to contextualize the ideology of the standard approach to American Indian economic development. This section is followed by the contemporary mainstream nation building approach to American Indian economic development and specifically highlights its limitations. Lastly, the JG program is introduced as an alternative to both mainstream forms of development. Particular attention is placed on how the JG program

re-enforces American Indian sovereignty, self-determination, and cultural enrichment alongside economic development programs and job creation.

8.2 On the Reservation: Poverty, Unemployment, and Development Strategies

Amid the lakes and pine trees in northern Minnesota lie the three largest American Indian reservations in the state: White Earth Nation to the northwest approaching Fargo, ND, Red Lake Nation to the north up to the Canadian border, and Leach Lake Nation to the northeast toward Duluth MN. These three reservations form a triangle and in the center lay the city of Bemidji. Bemidji Minnesota is a town of just over 13,000 yet it is also a county seat and a major hub for commerce in northern Minnesota. Bemidji's local economy consists of a handful of national and international chain stores and restaurants and many local businesses. All of these businesses rely on consumer demand from both citizens of Bemidji and from citizens in the nearby reservations. It is important for Bemidji's local economy to attract consumers from the reservations but it comes at a cost to adjacent American Indian nations. Every dollar spent by tribal members in Bemidji is a dollar that is not supporting local tribal businesses. The outflow of finance, capital, and people (consumers and producers) away from reservations is not unique to the tribes of northern Minnesota and it hinders economic development strategies for many tribal governments leaving many American Indian reservations disproportionately poor.

Supporting evidence for the outflow of earnings is hard to come by. Most of the evidence is anecdotal. Typically it is based off of personal accounts of many entrepreneurs whose local businesses failed or tribal governments finding it difficult to attract outside investment, or from potential native entrepreneurs who are unable to secure external finance. Most of the evidence to substantiate these claims are based off of personal accounts because economic development reports from tribal governments rely on US census data. Census data on flow of income/earnings are aggregated by county—not aggregated by American Indian reservation. However, we may correct for this by selecting a sample of American Indian reservations that occupy an entire county.

Knowing this limitation on the availability of accurate data on the flow of earnings, five American Indian tribes in Minnesota, North Dakota, and South Dakota were selected: the White Earth Band of Ojibwe (Mahnomen County MN), Standing Rock Sioux Tribe (Sioux County ND and Corson

County SD), Cheyenne River Sioux Tribe (Dewey and Ziebach counties, SD), Oglala Sioux Tribe of Pine Ridge Indian Reservation (Shannon County, SD), and Rosebud Indian Reservation (Todd County SD). These reservations were selected to serve as case studies because each reservation makes up the whole of their respective county (or counties). In these cases, county-level data is data for the reservation and therefore American Indian reservation data are not confounded with data from other cities or municipalities. Further, when reservations occupy that much physical space, they are typically the most populous reservations within their respective states.

As of 2005,[3] White Earth Reservation has 19,506 residents living on or near the reservation.[4] White Earth Reservation itself is 829,440 square acres featuring 530 lakes over 10 acres in size and over 300 miles of rivers among the 3 river systems. The reservation itself is squeezed between Fargo, ND to the southwest and Bemidji MN to the east; both cities are within an hour or so drive of the reservation. Like many American Indian reservations, White Earth is a checkerboard of scattered Indian-owned land and non-Indian land. To date, Indian-owned land on White Earth is between 9 and 10 percent. Lack of native land ownership is a result of contemporary policies of free-market development and the result of historical policies of US government tax forfeitures and land allotments in the twentieth century (more on allotments below). Eighty percent of the tribal-owned land on White Earth is forested and much of the commercial agricultural land on the reservation is non-Indian owned.[5]

The 2005 unemployment rate stood at 25 percent (this includes all those marginally attached). The unemployment rate is below the on-reservation national average, but well above the 2005 US U-5 unemployment rate of 6 percent. Combating chronic unemployment and poverty is a leading goal of the White Earth Reservation Tribal Council. Like many reservations, educational attainment is far below the national average. As of 2010, 10 percent of the White Earth population did not earn a high-school diploma. This is double the state average; but this is a significant improvement since the 1970s when three-fourths of the White Earth population earned less than a high-school diploma.[6]

Educational attainment and economic mobility are highly correlated. However, education is a necessary but not sufficient condition for economic prosperity. There must also be economic opportunities available on the reservation and these must be coupled with consumer demand. The geographical location of many American Indian reservations makes sustaining economic development a difficult task. Like many American

Indian reservations, White Earth Reservation is rural, whose citizens rely on nearby incorporated cities for purchasing goods and services.

> The community of White Earth has historically served as the center of activity on the White Earth Reservation. Residents on the Reservation, however, rely on the incorporated cities for commercial services. Within the Reservation, the City of Mahnomen, the county seat for Mahnomen County, serves as the commercial trade center. The residents of the Reservation also utilize regional centers surrounding the Reservation for goods and services, including the cities of Detroit Lakes, Bemidji and Fargo/Moorhead. (ibid. p. 16)

That said, White Earth's Economic Development Commission identifies significant growth in employment in the arts and entertainment sectors following the construction of the Shooting Star Casino and Events Center in the 1990s. However, even after the casino's construction, the official unemployment rate stands over 25 percent. Even though this is considered progress, any community and any nation with an unemployment rate of over 25 percent still faces serious economic and social problems which continue to plague White Earth Nation and most American Indian reservations. The same report also indicates that the largest decline in economic activity over the past decade is in retail trade, with over a 12 percent decline, yet it makes up the third highest percentage of the workforce (ibid. p. 20). One reason for decline of retail services is that earnings are flowing out of the reservation rather than coming in. Flow of earnings data is presented for White Earth Band of Ojibwe in Table 8.1. From Table 8.1, *Inflow of Earnings* represents money spent within the reserva-

Table 8.1 Flow of earnings, White Earth Band of Ojibwe

	2008	*2009*	*2010*	*2011*	*2012*
Inflow of earnings (thousands of dollars)	$15,203.00	$15,856.00	$16,183.00	$16,451.00	$17,563.00
Outflow of earnings (thousands of dollars)	$21,690.00	$21,348.00	$21,269.00	$22,021.00	$23,677.00
Residence adjustment	($6487.0)	($5492.0)	($5086.00)	($5570.0)	($6114.0)

tion, *Outflow of Earnings* is earnings leaving the reservation, similarly, the *Residence Adjustment* is the net flow of earnings. As substantiation to the quote above, consumers are leaving White Earth Reservation to spend their money in nearby communities to the tune of over $6 million dollars leaving the reservation annually! During the planning process for White Earth's development strategy, community members were asked what their goals were. Not surprisingly, they reported that the reservation lacked jobs, and the jobs that were available were typically low-wage jobs. Every community on the reservation reported problems of run-down housing, garbage in the lawns and on the side of the roads, and graffiti. When the community was asked about their goals, they reported strong interest in encouraging native-owned small businesses (despite the current barriers), building more hiking and bike trails, fishing piers, and other recreational activities so that community members can enjoy their environment (ibid. p. 26).

Much like Indian Country in Minnesota, Indian Country in South Dakota is rural and isolated. However, the Sioux tribes who reside in South Dakota live in a state of chronic poverty. The counties that make up American Indian reservations in South Dakota are among the poorest regions in the USA. Corson County SD and its neighbor to the north Sioux County ND lie entirely within Standing Rock Indian Reservation. These two counties rank among the ninth and seventh poorest counties in the nation, respectively. The top three poorest counties in the nation are Shannon County SD (3rd), Todd County SD (2nd) and Ziebach County SD (1st). The Oglala Sioux Tribe (Shannon Co.), Rosebud Sioux Tribe (Todd Co.), and the Cheyenne Sioux Tribe (Ziebach Co.) call these places home. In these counties, the percentage of the population living below poverty is between 41 and 50 percent. As described in Table 8.2, the

Table 8.2 Unemployment and poverty among the Sioux Tribes of North and South Dakota

Tribe	*Population*	*% Unemployed*	*% Employed in poverty*
Standing Rock Sioux Tribe SD	6461	86.00	43.00
Standing Rock Sioux Tribe ND	7709	63.00	71.00
Cheyenne River Sioux Tribe	15376	88.00	100.00
Oglala Sioux Tribe of Pine Ridge IR	43146	89.00	34.00
Rosebud Sioux Tribe	26237	83.00	76.00

unemployment rate, and the poverty rate of the employed remain devastatingly high. Similar to the experiences within Mahnomen County MN, the American Indian reservations in these counties in North Dakota and South Dakota experience a flow of earnings out of the reservation over the past five years. The data is presented in Table 8.3.

Unemployment and poverty is a ubiquitous presence on many American Indian reservations. It is precisely this reason that prevents businesses—Indian owned or otherwise—from succeeding on American Indian reservations. An Oglala Tribal Council member cites "an epidemic of drug use and alcohol use on our reservations" as an obstacle to development. Other tribal leaders cite the lack of educational attainment and lack of money and capital.[7] Social problems such as the ones described are the result of poverty. However, paradoxically, these problems are circular and cumulative. Poverty, unemployment, crime, chronic substance abuse, and lack of education are mutually reinforcing.

Cornell and Kalt (1992, p. 6) argue that in spite of a few notable successes, the odds of successful development strategies weigh heavily against American Indian reservations. Some of the primary obstacles cited are: (1) lack of access to financial capital, (2) lack of human capital and means to develop it, (3) poor or mismanaged natural resources, (4) distance from markets, (5) competition from non-Indian markets, (6) political bureaucracy, (7) substance and alcohol abuse, and (8) and tribal cultures get in the way of development. Some of these obstacles mirror the evidence provided in the case studies for counties in Minnesota and South Dakota and North Dakota.

8.3 Standard Approach to American Indian Economic Development

Given these obstacles, there are two mainstream approaches to economic development for American Indian communities: the standard approach and the nation building approach (Cornell and Kalt 2006, p. 3). The standard approach to economic development (considered the old approach) evolved following the Indian Reorganization Act (IRA) of 1934 and encompasses an ideology passed down from the IRA.

The IRA was a major piece of legislation that changed the Office of Indian Affairs (Bureau of Indian Affairs) from a management agency to an advisory agency. Prior to its passing, the Office of Indian Affairs managed every aspect of tribal government without representation of tribal members

Table 8.3 Flow of earnings, Sioux Tribes of North and South Dakota

	2008	*2009*	*2010*	*2011*	*2012*
Standing Rock Sioux Tribe (Corson County, SD)					
Inflows of earnings (thousands of dollars)	$13,391.00	$14,112.00	$15,101.00	$15,992.00	$16,534.00
Outflows of earnings	$4228.00	$4940.00	$5202.00	$543800	$5666.00
Residence adjustment	$9163.00	$9172.00	$9899.00	$10,554.00	$10,868.00
Sioux County ND					
Inflows of earnings (thousands of dollars)	$2605.00	$2694.00	$2905.00	$3086.00	$3221.00
Outflows of earnings	$25,187.00	$26,572.00	$28,619.00	$30,415.00	$31,364.00
Residence adjustment	$(22,582.0)	$(23,878.00)	$(25,714.00)	$(27,329.00)	$(28,143.00)
Net residence adjustment	**$(13,419.0)**	**$(14,706.0)**	**$(15,815.0)**	**$(16,775.0)**	**$(17,275.00)**
Cheyenne River Sioux Tribe (Dewey County, SD)					
Inflows of earnings (thousands of dollars)	$2911.00	$3029.00	$3369.00	$3680.00	$3819.00
Outflows of earnings	$10,077.00	$10,614.00	$11,834.00	$12,361.00	$12,955.00
Residence adjustment	$(7166.00)	$(7585.00)	$(8465.00)	$(8681.00)	$(9136.00)
Ziebach County, SD					

(*continued*)

Table 8.3 (continued)

	2008	*2009*	*2010*	*2011*	*2012*
Inflows of earnings (thousands of dollars)	$8131.00	$8612.00	$9610.00	$10,068.00	$10,549.00
Outflows of earnings	$1783.00	$1812.00	$2067.00	$2271.00	$2338.00
Residence adjustment	$6348.00	$6800.00	$7543.00	$7797.00	$8211.00
Net residence adjustment	**$(818.00)**	**$(785.00)**	**$(922.00)**	**$(884.00)**	**$(925.00)**
Oglala Sioux Tribe of Pine Ridge Indian Res. (Shannon County, SD)					
Inflows of earnings (thousands of dollars)	$2280.00	$2079.00	$2080.00	$2081.00	$2087.00
Outflows of earnings	$44,506.00	$46,614.00	$49,207.00	$50,842.00	$51,104.00
Residence adjustment	**$(42,226.0)**	**$(44,535.0)**	**$(47,127.0)**	**$(48,761.0)**	**$(49,017.00)**
Rosebud Sioux Tribe (Todd County, SD)					
Inflows of earnings (thousands of dollars)	$3766.00	$3841.00	$3973.00	$4156.00	$4541.00
Outflows of earnings	$23,259.00	$23,821.00	$25,145.00	$25,712.00	$26,187.00
Residence adjustment	**$(19,493.0)**	**$(19,980.0)**	**$(21,172.0)**	**$(21,556.0)**	**$(21,646.00)**

and without regard to American Indian customs or traditions (Treuer 2012, p. 95). The IRA terminated land allotments, halting the erosion of American Indian land and stabilized its land base. The IRA reorganized tribal government, encouraged tribal governments to draft their own constitutions, and established a revolving loan program for tribal development.

On the surface, the IRA appears to be a large step forward, but many deficiencies exist. The US Department of the Interior drafted most of the tribal constitutions. Consequently, many tribal constitutions do not reflect the customs, values, and traditions of American Indians. Of the 333 tribal constitutions, 250 were based off the IRA—an act written by US legislatures. For example, the constitution of White Earth Nation "doesn't have an independent judicial system. It does not have separation powers. And there are about 27 references about asking permission from the Secretary of Interior in order to do something."[8,9]

The standard approach to American Indian economic development was borne out of IRA legislation. Consequently, development policy reflects a white, pro-capitalist ideology that is incongruent with the traditions and customs of many native groups. Attempts toward development were mired with bureaucracy and economic progress stifled. Decision-making was short-term and non-strategic. Short periods in elected office created disincentives for elected officials to think beyond their two-year terms. Consequently, the focus concentrated on starting up businesses rather than sustaining businesses. Failed business investments dot American Indian reservations (ibid. p. 4). The standard approach ignores local traditions and local cultures and treats unemployment and poverty as simply economic problems. Indigenous cultures are viewed as a hindrance to economic progress (ibid. p. 7) rather than as a means toward development. The sentiment at the Bureau of Indian Affairs was that "Indian economic development can proceed only as the process of acculturation allows"[10] The standard approach to American Indian economic development reflects a 200-year mindset of the so-called Indian problem.

8.4 Acculturation, Assimilation, and Termination

US Government policy to solve the perceived "Indian problem" by means of acculturation, assimilation, and termination came disguised through treaties, allotments, taxation, and educational reform. The initial phase of acculturation and assimilation attempts came during the Treaty Period,

(1778–1871) when the US government engaged in government-to-government treaties with American Indians as a means to acquire American Indian land. Within this period, the US Senate ratified 370 treaties. In partial payment for the ceded land, the US government would guarantee usufructuary rights to the tribal citizens. In many treaties, the US government guaranteed to provide education assistance, health care assistance, and economic development assistance. Much of this assistance never materialized, and when it did, it was used as a means of acculturation and assimilation rather than as a path toward economic development and tribal sovereignty.[11]

When Grover Cleveland signed the General Allotment Act of 1887 (also called the Dawes Act), he proclaimed: "the hunger and thirst of the white man for the Indian's land is almost equal to his hunger and thirst after righteousness". Under the Dawes Act, each native individual would be allotted 160 acres of their own land. The remaining surplus land was to be sold by the US government to white settlers for individual, private use. The funds from the sale were to be used for "houses, farming implements, and schools, and to make them [American Indians] a happy and prosperous people."[12] The actual effect of this act was that American Indian reservations became a checkerboard of Indian and mostly non-Indian land.

Today roughly, 65 percent of all American Indian reservations are owned by non-Indians.[13] For some tribes, like the White Earth Band of Ojibwe, closer to 90 percent of the land is non-Indian owned. Allotments of American Indian land was a direct policy to impose an ideology of individual private property, to break up the tribes as a social unit, and to further assimilate American Indians into white America.

The process of assimilation and acculturation as a means of development of American Indians continued in 1869 when President Grant signed the Peace Treaty; and the policy continued into the 1970s. The Peace Treaty established residential boarding schools. The first federally commissioned residential boarding school opened in 1871: the Carlisle Industrial Training School, in Carlisle, Pennsylvania. The philosophy of the Carlisle School was to elevate and moralize American Indian children. Within the next 30 years, 485 residential boarding schools would be built throughout the country. The Bureau of Indian Affairs directly controlled 25 of these and 465 were on-reservation missionaries run by Christian organizations working in conjunction with the BIA. Rather than as a tool

to develop one's human capital, American Indian education was used to assimilate rather than educate.

> If the mission schools started the process of alienation, the federal government completed it with the policy of assimilation in the late nineteenth century. Its goal was the absorption of Indian youth into the mainstream of American life. Its fruits were a further loss of unique Indian qualities and cultural identity.[14]

Residential boarding schools were English-only speaking schools. Students continued to be robbed of their native identity, forced to cut their hair, abandon their native religious beliefs, and convert toward Christianity.[15] Children who attended these schools were left feeling out of place both at home on reservations and in white America (Treuer 2010, pp. 31–33). The close relationships between the federal government and Christian organizations ensured that residential boarding schools were effective at eliminating language, native traditions, spiritual beliefs, and native cultures. Native languages were indeed lost and many American Indians converted to Christianity. Even in modern times, many American Indians question whether education is used for assimilation purposes (Treuer 2010). Assimilation practices still occur as American Indian's history, tradition, and culture is scare or absent all together from much of the academic curriculum.

The policy of assimilation was furthered through Indian termination acts. The policy of the US government at the time was that American Indians would be better off if they were completely assimilated into mainstream—white—America. In which case, the US government conferred rights to US citizenship to American Indians, but also began on a tribe-by-tribe basis of terminating the US government's recognition of tribal sovereignty. The US government terminated the recognition of tribal sovereignty beginning from tribes who were most acculturated and then working their way down. Terminated tribes would be treated like any other American citizen. The right to negotiate directly with the US government was lost and these tribes were now subjected to state and county laws and taxes. All-in-all, 109 tribes were terminated and most were never reinstated (Treuer 2012, p. 99). For the first time the land and businesses owned by the terminated tribes became eligible for state and federal taxes. Approximately 2,500,000 acres of tribal-owned land was forfeited to the US government and resold to non-Indians.

8.5 Nation Building Approach to Economic Development

The US policy of encroaching on American Indian sovereignty, upsetting traditional values and ways of life, and attempting to eliminate tribal cultures and languages in the name of development is nothing new to American Indians. Amid these intrusions; and despite chronic impoverishment, unemployment, and its accompanied social problems,[16] are a people who are "resilient, surviving language and culture, authentic spiritual connection, a sense of community, sovereign power, and survival (Treuer 2010, p. 67)".

The alternative to the standard approach is the so-called *nation building approach* to economic development. The nation building approach recognizes that the most effective development strategies center on de-facto American Indian sovereignty. Meaning, tribes are recognized as sovereign, yet domestically dependent nations. The nation building approach centers on tribal leaders taking control over tribal affairs and their resources. Self-determined economic development makes no assumptions that all tribe's developmental goals are identical. Further, it underlies the tenet that American Indian tribes are committed to their own development without losing control over their political and economic sovereignty. Transferring control of development strategies from the Bureau of Indian Affairs to American Indian reservations links economic decision-making to the consequences of these decisions (Cornell and Kalt 1992).

For the nation building model to be in any way effective, both formal and informal institutions need to be put into place. Formal institutions include formal laws and regulations enacted by tribal governments. Formal institutions require stable and effective political organizations. There must be an effective means for tribal nations to adjudicate their laws, for political and judicial effectiveness culture matters. Cultural norms and institutions must support and compliment local governments (Jorgensen and Taylor 2000, p. 12).

The nation-building model relies on the development of private markets, particularly private venture capitalists, to provide start-up funding for new businesses with political institutions that support these initiatives. Jorgensen and Taylor's (2000) study on the successes and failures of tribal- and Indian-owned enterprises concludes that Indian-owned small businesses lack the technical expertise to be profitable. They are too dependent upon technical assistance from the US government and the assistance they

do receive fails to meet the need of Indian-owned businesses. Technical assistance is positively correlated with profitability. Thus, unmet technical needs reduce the profitability of Indian-owned businesses and undermines success. Lack of profitable investment opportunities further limits the acquisition of venture capital. The authors prescribe that capital investment into Indian-owned ventures must be coupled with firm-specific technical assistance.

The authors assert that tribal governments should move away from direct US government aid and toward private venture capital (ibid. p. 20).

8.5.1 Limitations of the Nation Building Approach

The nation building approach is seen as the most promising option for contemporary economic development (Woodrow 2007). The specific reason for this optimism is that it centers on tribal decision-making and self-determination. That said there are many limitations to the nation building approach. Rather than promoting self-determination, nation-building efforts result in indirect attacks on tribal sovereignty, both when the acquisition of finance comes directly from the US government and from private markets.

Section 17 of the IRA allows loans to be allocated for tribal development. Even today, many American Indian reservations rely on federal grant dollars for development projects. The consequence is that this avenue of funding allows the US government to decide on the appropriation of funds thereby regaining influence into American Indian affairs. Rather than as a means for progress, accepting federal dollars encroaches on tribal sovereignty and weakens American Indian's efforts toward self-determination (Treuer 2010, p. 92). The US federal government deals with American Indian tribes as distinct and unique sovereign governments. However, for economic development of any kind to be effective, it must promote, not just recognize tribal sovereignty.

> Self-government is essential for tribal communities to continue to protect their unique cultures and identities, and in turn, tribal cultures and traditions provide the foundation upon which Indian communities are governed.[17]

The nation building approach exalts tribal self-determination as a cornerstone of development; yet the approach indirectly encroaches on tribal

sovereignty. A primary example of the affliction on tribal sovereignty is the recommendation against tribal management of businesses.

> Separating business and government is critical because many Indian businesses are government-owned (occasionally by law and frequently by design). This feature invites conflation of two contradictory institutional virtues good constituent service to voters and fiduciary duty to shareholders–and thereby creates tremendous risk to profitability as elected leaders are pressured to interfere in business on behalf of voters (Jorgensen and Taylor 2000, p. 6)

Under the nation building approach, tribal-owned businesses are the least successful. The alternatives are separating tribal ownership from management of companies and/or opening up opportunities for non-native businesses to develop. The foundation of nation building rests on the development of sound governmental laws and regulations in order to sustain market economies. As such, tribes are instructed to separate business from politics, build a solid governance infrastructure, and institute an independent business division and implement comprehensive business laws (Woodrow 2007).

While Indian nations are lauded for their strives toward political reform, the problem is that these governance structures lack indigenous values and leadership structures (Treuer 2012, p. 123). The reasons stem from history as well as current economic conditions. When different tribes were pushed onto a single reservation, chiefs from numerous communities were forced to settle and govern creating rifts in local governance structures (ibid). In modern times, elected officials struggle with constitutions that do not align with the tribes' culture and values. Tribes must address the needs of the community brought about by high unemployment, crime and poverty; and they must have resources to maintain cultural and community programs. Tribal governments are left with balancing and prioritizing competing projects for the limited amount tribal funds and resources. Cornell and Kalt (1992) stress that community support for tribal initiatives "depends critically on achieving a match between the formal institutions of governance on the one hand and the culture of the society on the other" (ibid. p. 15).

The focus on venture capital funding over foreign aid puts the interests of the capital investor over that of American Indian nations. Private

venture capital as an instrument to success is a Euro-centric (and wholly archaic) principle stemming from Adam Smith's *Wealth of Nation's* "It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own interest" (Smith 1986, pp. 172–173). This development strategy is the common free-market myth that what is good for the individual (profits for the venture capitalist) would be beneficial for society as a whole. However, Adam Smith was Scottish not an Ojibwe, Sioux, nor Lakota. Adam Smith's vision does not necessarily align with the visions of distinct and unique American Indian nations.

The second problem with the nation building approach is coupled with the first. Nation building is a free-market driven process predicated on the generation of profits. However, like the data from the reservations of the Ojibwe and Sioux tribes described[18] the flow of earnings are moving out of American Indian reservations.

> The central problem is to create an environment in which investors, whether tribal members or outsiders, feel secure, and therefore are willing to put energy, time, and capital into the tribal economy. (Jorgensen and Taylor 2000, p. 21)

The feeling of security refers to financial security stemming from the creation of profits. In a free-market system private investors would be unwilling to put their energy, time, and capital into tribal economies (or any regional economy) if there was no expectation of profits. Because again, all venture capitalists are concerned about is profit generation, not necessarily the preservation of tribal economies. The pursuit of economic development through private venture capital potentially creates a mismatch between the microeconomic goals of the individual investor and the macroeconomic goals of tribal governments.

Underscoring these first two problems is the third, and perhaps most debilitating, is that private market development is akin to opening up Pandora's Box. The acquisition of outside financial capital, at the very least, creates the potential to bring in non-Indian interests onto American Indian reservations. At the very worst, it may lead to the forfeiture of physical assets and proliferate the checker-boarding that was seen during the allotment period.

8.6 American Indian Job Guarantee Program

Economic development policies that emphasize capitalist efficiency (for-profit economic development) cannot also emphasize indigenous cultures and lifestyles central to American Indian nations. The separating distinction between the American Indian JG program and the nation building approach is that the JG approach is non-profit whereas the nation building approach focuses on the mainstream, free-market concept of for-profit development strategies.

The details of the JG approach to economic development are that the US federal government would completely finance a jobs program. The jobs would be available to anyone willing and able to work. Local tribal governments would hire workers directly. All workers enrolled in the program would be guaranteed work and be on the tribal government payroll. It would then be up to local tribal governments to decide the work to be done based upon the needs to community. The economic theory underlying the JG approach to full employment is relatively simple; as Hyman P. Minsky (1986) outlined:

> The policy problem is to develop a strategy for full employment that does not lead to instability, inflation, and unemployment. The main instrument of such a policy is the creation of an infinitely elastic demand for labor at a floor or minimum wage that does not depend upon long- and short-run profit expectations of business. Since only government can divorce the offering of employment from the profitability of hiring workers, the infinitely elastic demand for labor must be created by government. (Minsky 1986, p. 308)

The tenets underlying a JG program are that the (1) JG program provides an infinitely elastic demand for labor, (2) JG hires off the bottom, (3) JG creates a pool of available and skilled laborers available for private sector employment, (4) JG enhances human capital, and (5) JG performs valuable work (Tcherneva and Wray 2005, pp. 5–6). The JG program to combat unemployment and provide external benefits for the society as a whole shares a similar vision with Franklin D. Roosevelt's Depression-era New Deal programs to combat persistent unemployment.

New Deal projects are perfect examples of direct job creation programs in the non-profit sector. The New Deal created the Civilian Conservation Corp (CCC) whose role was to green the earth. The CCC planted trees,

built hiking and biking trails, built fishing piers, lodges and state parks. In fact, the reservation of the White Earth Band of Ojibwe is adjacent to Itasca State Forest, which benefited from many CCC projects. Another successful non-profit New Deal program was the Works Progress Administration (WPA). The WPA mobilized young men to work on many public works projects, including public art projects, literary projects, and the performing arts. The WPA also constructed roads, bridges, and state and federal buildings. When members from the nations of White Earth, Red Lake, or Leech Lake tribes attend classes at nearby Bemidji State University, they are walking on sidewalks constructed in 1934 and 1935 by WPA workers. They are entering classroom buildings that were built by WPA members. The simple fact that projects enacted to combat unemployment during the Great Depression are still in use today is a testament to the superiority of public work policies over traditional welfare policies. The New Deal programs provided employment, sustained and strengthened local communities, and created long-lasting benefits that we still enjoy today. New Deal public works programs popped up in every state throughout the 1930s and 1940s. The one thing all these programs had in common was that they were all non-profit.

Supporting non-profit initiatives is what separates JG programs from the initiatives of the nation building approach. The US federal government is the only entity that is able to divorce the profit motive from community investment initiatives. Pursuing this avenue of funding and development encourages tribal ownership, re-enforces and strengthens sovereignty, and supports non-profit community initiatives.

Whereas the nation building approach warned against tribal ownership of businesses, the JG approach embraces it. Because the JG focuses on jobs, not profits, local tribal businesses need not be profitable to be enacted; they simply must conform to the goals of greater society. If tribal businesses do turn a profit over time, such revenue may be reinvested in local tribal communities according to their goals and desires.

The American Indian JG approach to economic development allows long-term investments to be undertaken rather than the short-term initiatives that plagued mainstream approaches. This allows support and encouragement to develop and expand tribal-owned small businesses. Many American Indian reservations are proud owners of tribal-owned businesses. Revenues generated from tribal-owned businesses (including casinos) are currently used to support local community initiatives and per-capita dividend payments. The American Indian job guarantee program

would further develop and expand tribal-owned small businesses. This would promote economic opportunities for tribal residents while preserving and representing their unique cultural heritage.

With any good development strategy, the JG program must be multifaceted. Existing literature on the JG program emphasizes human capital development as a key component.

> The traditional model that future workers receive their formation when young and any future re-skilling occurs on the job no longer suffices. To maintain skills and full employment in increasingly sophisticated workplaces, a new model is needed, one that provides those who do poorly in school with needed skills while continually retraining those who become and remain unemployed because of obsolete skills. (Wisman and Reksten 2013, pp. 6–7)

Nowhere does this sentiment ring more true than on American Indian reservations. Educational attainment on reservations is still drastically low compared to national averages and unemployment is high. The two go hand-in-hand. High rates of unemployment on the reservations are due to both an economic decline and lack of specialized skills. For illustration, the White Earth Nation, *Comprehensive Economic Development Strategy* identified the following impediments to employment acquisition[19]:

- Lack of trainings local to the Reservation.
- The Reservation's existing workforce cannot meet employers specialized needs.
- The limited funding sources for training make it difficult to serve small, rural employers.
- Many of the non-skilled workers are also lacking work-readiness skills.
- Educational attainment figures for the people of White Earth are very discouraging.

Under the JG approach to development, workers would be paid for training. Further, human capital investments help bolster local tribal colleges. Strengthening tribal colleges and schools can begin to alleviate the achievement gap of American Indian youth. American Indian history, language, and culture can be reenforced in the tribal colleges and schools. In time, more American Indian children and college students will be taught

by native teachers rather than outsiders, establishing role models that are more positive for American Indian youth.

The JG approach to economic development re-defines what is meant by useful work. Since the JG approach is non-profit, it can collaborate with existing non-profit enterprises, supporting community initiatives. Efforts on White Earth Reservation include the White Earth Land Recovery Project whose mission is to facilitate and recover the original land-base of White Earth Reservation. Language immersion programs can also be useful work under the JG program. This can help turn the tide of rapid language loss. Currently, of the 180 native languages 160 of them are expected to disappear over the next 30 years (Treuer 2012)!

The purpose of the American Indian JG program is to provide meaningful employment that enriches the cultural diversity of American Indian tribes. Historical policies of assimilation have failed. Contemporary free-market pro-capitalist policies are doomed to fail or assimilate American Indian's further. The JG approach to economic development takes the opposite approach. By focusing on societal goals rather than on market efficiency, the JG program works for American Indian reservations rather than against them. The JG program could be used to develop communities, enhance education, and support the teachings of language and cultures.

> It is important to realize that America's greatest strength and greatest potential in helping Indians lies not in attempting to assimilate and integrate them further, but rather in respecting and supporting the cultural and linguistic diversity that makes this country great. (Treuer 2012, p. 118)

An American Indian JG program would contribute to economic stability on American Indian reservations and provide economic mobility for those affected. The economic benefits include boosting production and output by increasing job opportunities. Even if the JG jobs are purely non-marketable public goods, the income effect from wages would have a regional multiplier effect, boosting local private-sector demand and employment for retail and other consumables. While beyond the scope of the current chapter, the regional multiplier effect could be ensured if federal JG programs were coupled with local currencies. This would ensure that the re-spending of wages is invested back into local economies thus alleviating the net-outflow of income and earnings which currently plague reservations. Beyond the economic benefits, an American

Indian JG program would help address the horrific social costs to unemployment that inflict so many households living on reservations. It would also contribute toward alleviating racial inequality. Finally, because it can support non-capitalist forms of development, the American Indian JG program can support and enhance cultural programs and initiatives of local tribes. The US federal government can turn the page from the failed pro-capitalist policies of the past and propose a progressive program that is non-profit which allows for true American Indian sovereignty and self-determination.

Notes

1. Here we must make a brief note on terminology. I have adopted Anton Treuer's (2012, pp. 7–8) use of the term "American Indian" to refer to this nation's first people. The term 'Indian' is obviously problematic and for some offensive. But as Treuer notes, the terms 'native', 'indigenous', First Nations person, and aboriginal, "are equally problematic, and in some cases cumbersome." So for sake of simplicity I have followed Treuer (2012) and will utilize the term "American Indian" throughout the article, recognizing its limitations. However, I do not want these limitations to distract from the thesis of the chapter (August 23, 2015).
2. 2005 data is the newest available and was published in the Fall of 2013.
3. 2005 data published by the Bureau of Indian Affairs is the most recent data available.
4. "2005 Local Estimates of the Indian Service Population and Labor Market Information" *Bureau of Indian Affairs.*
5. "White Earth Comprehensive Economic Development Strategy" White Earth Nation, August 2013.
6. Source: ibid., p. 22.
7. "Nation's top three poorest counties in Western South Dakota" *Rapid City Journal.*
8. Hopfensperger, Jean "Tribes across the country are re-examining their constitutions" Minneapolis Star Tribune, July 6, 2013.
9. Many tribes, including the White Earth Reservation, have recently adopted new constitutions that more closely reflect the traditions and customs of the people.
10. US Bureau of Indian Affairs (1969), p. 333.
11. Land use-rights are often contested in court. American Indians are not subjected to state ordinances governing hunting, fishing, and gaming on land covered by treaties and federal treaties supersede all state laws and ordinances.

12. Statement from Bishop Martin Marty in his negotiations preceding the treaty of 1889. Quoted in Brill 1992, p. 2.
13. Gibson, Daniel (July–August 2011) "What is a tribe without any land" *Native Peoples.*
14. Thompson, Ted. *The Schooling of Native America*, quoted in: Juneau, Stan (2002) "A History and Foundation of American Indian Education Policy."
15. Forced haircuts were a means to strip away child's identity. Long hair is symbolic of spiritual health and strength (Treuer 2010).
16. Jon Wisman (2010) provides an excellent overview of the social consequences of unemployment.
17. "An Introduction to Indian Nations in the United States" *National Congress of American Indians* ncia.org.
18. Please refer to Tables 8.1, 8.2, and 8.3.
19. Source: The White Earth Nation, *Comprehensive Economic Development Strategy*, pp. 25–30.

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CHAPTER 9

Full Employment and the Job Guarantee: An All-American Idea

William Darity Jr and Darrick Hamilton

The idea of the provision of a federal job guarantee for all citizens actually is quite conventional in American politics. It is neither a flash in the pan nor a pie-in-the-sky policy proposal. It has a long and enduring presence on the American scene. It simply never has become law. Indeed, it has required a profound act of "historical amnesia" (Ginsburg 2012) to purge our memories of how frequently the idea has been considered (and considered seriously).

Widely vilified as a demagogue, tyrant, and dictator, Louisiana Senator, Huey Long (Long 1934), advanced a comprehensive plan to achieve greater economic equality in the United States. In a radio address delivered on February 23, 1934, in the midst of the Great Depression, Long proposed that all Americans receive a guaranteed annual income of $2000—one third of the national average. He advocated placing a ceiling on personal fortunes at $50 million and application of a graduated tax on

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wealth levels at $1 million and above. The revenues gathered from the wealth taxes would be redistributed to provide a host of services and opportunities for the mass of Americans—Americans who, in the aftermath of the Occupy movement, we refer to as the 99 percent.

While Long's efforts to promote economic equity—particularly in his home state of Louisiana—predated the onset of the Great Depression, his "Share Our Wealth Plan" had a particular resonance in the downturn that put up to one-quarter of the American labor force out of work.

In his recent book, *A Long Dark Night*, historian J. Michael Martinez (2016, p. 149) dismisses Long as barely more than "one in a long series of southern clowns" and as a mere "footnote in history". But Long's plan fired the imagination of many Americans—so much so that Franklin Roosevelt displayed genuine nervousness about a Long candidacy for the Presidency. Indeed, at one point, Roosevelt described Long as "one of the two most dangerous men in America"; the other was General Douglas MacArthur.

At the behest of Roosevelt's campaign effort, the Democratic National Committee "commission[ed] a secret political poll (perhaps the first use of polling for this purpose) to gauge [Long's] appeal; it found that he could get as much as 11 percent of the vote if he ran as an independent in 1936" ("Huey Long" 2000).

The poll was taken well before the 1936 Presidential campaign was underway, so Long's national appeal was significant even before the chase for primary votes had begun for the Democratic Party's candidate. Apparently confident that he would be nominated again, Roosevelt was concerned about the impact on his re-election prospects if Long, as a failed nominee, chose to run as a third-party candidate. Long did, in fact, announce his candidacy for the 1936 presidential election in August 1935; he was assassinated in September 1935.

Many of Long's fundamental ideas actually appear to have been incorporated into Roosevelt's own evolving program for transforming America. While the Roosevelt administration never pursued a direct tax on *wealth*—neither has any American administration since then (see Bersanek 2013)—it did increase the bite of the progressive *income* tax on its trajectory toward peak marginal tax rates in the early 1950s. Roosevelt's (1944) ambitious "Economic Bill of Rights," also known as the "Second Bill of Rights," echoed many features of the Share Our Wealth Plan.

The Economic Bill of Rights declared the following conditions to be rights of citizenship in the United States:

> The right to a useful and remunerative job in the industries or shops or farms or mines of the nation.
>
> The right to earn enough to provide adequate food and clothing and recreation …
>
> The right of every family to a decent home.
>
> The right to adequate medical care and the opportunity to achieve and enjoy good health.
>
> The right to adequate protection from the economic fears of old age, sickness, accident, and unemployment.
>
> The right to a good education.

The first two rights can be combined and interpreted as a right to employment at wages above the poverty level. Roosevelt's Economic Bill of Rights was ambiguous about the mechanisms for insuring that everyone would have a job. Would the government provide direct employment as it had under Roosevelt's Works Progress Administration (WPA) and his Civil Conservation Corps (CCC)? Would the government subsidize the private sector to provide the full complement of jobs? Would full employment be maintained indirectly via macroeconomic stabilization policies that prompted adequate job creation by the private sector?

Thoroughgoing reliance on the private sector was embodied in the Employment Act of 1946, passed after Roosevelt's death in 1945 and after the defeat of the considerably stronger Full Employment Bill in 1945. The 1946 Act was a gutted version of the 1945 bill and used the language of "maximum employment" instead of "full employment" as the goal of the legislation; "maximum employment" was well understood not to mean a job for everyone wanting to work. Unlike the earlier bill, the 1946 Act had no provisions for the federal government to assure a job for all by filling the gap for job seekers if the private sector fell short of putting everyone to work at decent wages (Harvey 2005; Ginsburg 2012).

Roosevelt's successor, Harry Truman (1949), called his program for economic equity, the "Fair Deal". It repeated many of the themes of the Roosevelt program, including calls for universal health care and legislation to produce full employment. In an earlier 1947 speech before the NAACP, Truman ("Address") had said:

> Every man should have the right to a decent home, the right to an education, the right to adequate medical care, the right to a worthwhile job, the right to an equal share in the making of public decisions through the ballot, and the right to a fair trial in a fair court.

But Truman was not specific about how "the right to a worthwhile job" was to be achieved, nor did he display his typical aggressiveness in pushing a resistant Congress to develop employment legislation with any teeth.

In contrast, Sadie Mosell Tanner Alexander, the first black recipient of a Ph.D. in economics in the USA, publicly stumped for a federal job guarantee. In a 1945 speech at Florida A&M University, fully in the spirit of Roosevelt's "Second Bill of Rights", Alexander (as quoted in Banks 2008, p. 154, emphasis added) observed:

> Freedom from want and freedom from fear can not be attained at home, when hoards of unemployed men and women are pounding the city streets, and bargaining on street corners against each other for a chance to do a day's work. I hold it the obligation of every American to remove those iniquities which have crept into our national life and caused men to fear want and to fear each other. Just as Congress and the courts have recognized the need to protect child labor, the …[right of] workers to organize for the purposes of collective bargaining and to picket to enforce their contracts with management, as well as the unfair economic treatment of women workers, *so too by act of the courts or by congressional act must the right to work in the Postwar World be guaranteed every able bodied man and woman in America, regardless of his race or religious beliefs.* Discrimination in employment because of race, color or religion is an abuse of a right as fundamental as denial [of] freedom of religion or freedom of speech.

Using a variant of under-consumption doctrine, Alexander prescribed an array of policies that would involve increased government spending to generate full employment in the post-World War II economy. Business excess profits should be taxed to finance a new public works program that would constitute the job guarantee; support slum clearance; raise literacy rates; ensure that every farm had access to electricity; redistribute income to strengthen social security, unemployment insurance, workers' compensation; and increase the minimum wage (Banks 2008, p. 155). Alexander did not anticipate the possibility that the existence of a right to employment might eliminate the need for unemployment insurance or minimum wage laws.

What she did anticipate was a widely shared benefit of the job guarantee that would transcend the racial divide in claiming employment as a basic human right:

> The right to work is not a black nor a white problem but a human problem … Every man should be concerned that every other man is employed, for only in full employment is the individual laborer assured a job … I need not state to you that full employment for all willing and able to work is also the solution of all our national difficulties. All our national and world problems stem from unemployment. (Banks 2008, p. 153)

Indeed, Alexander was persuaded that the establishment of conditions of full employment would address many of the factors sustaining racial inequality in the United States.

Alexander served on Truman's Committee on Human Rights in 1946, which issued the report "To Secure These Rights". The report, as Nina Banks (2008, p. 156) records, "… stated [under the heading of equal opportunity] that all Americans—regardless of race—should have the right to work, to rent/buy a house, and the right to education." Alexander understood the report—clearly a prelude to Truman's Fair Deal proposals—as forcefully "… stating that the right to work was a prerequisite for the right to live" (Banks 2008, p. 156).

Alexander was hardly unique among black intellectuals and activists in supporting an employment guarantee. Indeed, David Stein (2014) suggests that the explicit call for the state to ensure that all can have decently paid work, originates in the black movement for liberation. Stein (2014), citing W.E.B. DuBois's discussion in *Black Reconstruction*, has indicated that southern Reconstruction era legislatures, routinely disparaged by Lost Cause enthusiasts as incompetent and corrupt, called for and took steps toward enacting the equivalent of a job guarantee.

The job guarantee proposal also was realized fully in the Freedom Budget crafted by Bayard Rustin, on behalf of the A. Philip Randolph Institute. The Freedom Budget, issued in January 1967, was a reaction to the limitations of Lyndon Johnson's Great Society initiatives. One of the most pronounced limitations was the absence of a direct provision for assured employment. The Freedom Budget declared that federal tax revenues should be used "to provide jobs for all who can work and an adequate income of other types for those who cannot" (Rustin 1967, p. 11).

Rustin (pp. 12–13) was specific about the types of jobs that could be offered to meet public needs: build quality housing units to ensure that all have decent homes, assist with air and water pollution clean-up, contribute to the supply of adequate water and power services, build and maintain

public recreation facilities, design public and university classrooms, serve as public school teachers, and aid with hospital construction.

Shortly after George McGovern's ill-fated campaign for the Presidency, when he shifted his support from a basic income guarantee to a federal job guarantee (Alberti and Brown 2010–2014), the Caucus of Black Economists (1972), the coalition that preceded the formation of the National Economic Association, issued its own "Economic Bill of Rights". The Caucus (1972, p. 12) explicitly linked full employment to the government's role in delivering sufficient numbers of jobs, so that all seeking work could find work; their statement actually included an intentional rejection of the standard rhetorical description of the government as an employer of "last-resort":

> In achieving the goal of creating more jobs, equal status must be achieved by government and private industry as a job creating institutions. The government must act as co-equal with the private sector as an "employer of first-resort." To an unemployed man seeking gainful employment, there is nothing inherently more desirable in private employment than in government. From this point of view of the economy, a dollar earned in government employment pays rent, buys groceries, and pays taxes just as well as a dollar earned in private industry.

In addition, the Caucus' (1972, p. 12) document included another brilliant suggestion for the range of jobs that could be offered for public sector employment—the development and maintenance of a national network "of child care facilities available at reasonable rates for working mothers". On this point, the Caucus (1972, p. 12) added:

> Such facilities should not be merely custodial baby-sitting operations, but should provide a significant degree of training for child development. The staff of such centers will create many job opportunities for low income workers to assist qualified professionals. Full enforcement of existing legislation designed to end once and for all discrimination against women in employment is an absolute essential to any full-employment economy.

Notably, the existence of a federal job guarantee would provide all workers subjected to discrimination with an official promise employment. In addition to the types of jobs described by Rustin and the child care services introduced by the Caucus of Black Economists, other possibilities are rejuvenation of the postal service; construction and maintenance of roads,

bridges, and highways; as well as employment in a system of public banks and in community redevelopment projects (Tippett et al. 2014, pp. 25–27).

Bernard Anderson, a member of the Caucus of Black Economists and an economic advisor to the Carter administration, bridged the Caucus's "Economic Bill of Rights" with the Full Employment and Balanced Growth Act of 1978 (popularly known as the Humphrey-Hawkins Act). The 1978 Act duplicated some dimensions of the weak Employment Act of 1946. While the Humphrey-Hawkins Act was, in essence, an unfunded mandate, it explicitly called for the government to provide sufficient jobs to achieve full employment in the event that the private sector did not do so. If it had been implemented during the Great Recession, a major public sector jobs program would have been put into operation, paralleling the WPA and the CCC in the late 1930s.

Largely, there has been silence on the political front about a national job guarantee since the passage of the Humphrey-Hawkins bill. An exception that proves the rule is Representative John Conyers's effort to put teeth into Humphrey-Hawkins Act with House Resolution 1000, that he introduced in 2013 ("Text"). For the most part, it has been a scattered group of academics, primarily economists, who have kept the torch burning for the job guarantee. These include the late Nobel Laureate William Vickrey (Mitchell 2000); the late Hyman Minsky (1986, also see Papadimitriou and Randall Wray 1998); Philip Harvey (2005); and Trudy Goldberg and the National Jobs for all Coalition, L. Randall Wray, and Pavlina Tcherneva (2012).

It is vital to recognize that not only does the idea of a federal job guarantee have a lengthy American political history, it also has significant political support in the present moment. For example, the Black Youth Project 100's "Agenda to Build Black Futures" explicitly includes the charge that "All adults who want a job should have a right to employment through public or private opportunities through a federal jobs program" (2016).

In 2014, Jesse Myerson's article in *Rolling Stone* proposed five policies that should be supported by the millennial generation; one of them was a government employment guarantee. The other four were an expansion of Social Security to provide a minimum income for all (*de facto* a basic income guarantee), land value taxes, a sovereign wealth fund with state ownership of stocks and bonds, and a public bank in every state. When the *Huffington Post* commissioned a national survey to assess the degree of support for each of the five, the only one with substantial support was the job guarantee (Resnikoff 2014).

Overall a plurality of respondents, 47 percent, said that they favored the government providing jobs for all persons who could not find work with the private sector, versus 41 percent who said no, and 12 percent who had no opinion. Fifty-nine percent of households with incomes less than $40,000 favored the job guarantee, while 36 percent of households with incomes greater than $100,000 favored it. Forty-three percent of white respondents and 67 percent of black respondents supported the job guarantee, and the breakdown along party lines was as follows: 65 percent of Democrats, 39 percent of independents, and 35 percent of Republicans said that they favored a federal job guarantee (Swanson 2014).

It is odd that no major political actor has seized upon this information and put forward a platform that includes a commitment to a federal job guarantee. But perhaps the national act of forgetting is so powerful that even the survey data does not convince politicians that the policy is viable. Building support for a federal job guarantee will require penetration of the barrier posed by "historical amnesia". Hopefully, this essay can contribute to that process by helping to restore our historical memory.

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CHAPTER 10

Employment Guarantee Programs as Automatic Stabilizers: Stylized Facts on a Macro Context and Micro Structure for Argentina

Emmanuel Agis and Daniel Kostzer

10.1 Introduction

Both the economic theory and the management of state interventions abandoned the study of income distribution from a functional perspective for a long time. Ever since the consolidation of the marginalist school of

This chapter is based on a previous version (2010) aimed to describe income distribution in Argentina. The authors are deeply thankful to Maria Florencia Caula for her effort to translate this from Spanish. Anyhow, the content is still our responsibility.

Disclaimer: The opinions in this article rest solely with the authors and do not constitute an endorsement by the International Labour Organization (ILO).

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thought, it is known as the decline of the "Ricardian" school (Screpani and Zamagni 2005).

Significant efforts were made to consider income distribution, both in terms of functional and personal distribution, and as a residual variable, to the point of almost "naturalizing" its deterioration as a result of a progressive and renovating economic growth. Thus, equity would be achieved only after reaching certain levels of economic growth, led by corporate gains and investment, which would guarantee the efficient (in the neoclassical sense) functioning of the economy. The implicit message of the inevitability of the by-product of the free market was elevated to the category of economic law with the formulation of the so-called Inverted U of Kuztnets (1955).[1]

However, the relevance of income distribution, and in particular its functional aspect, central to the classical school of thought, and forgotten by the neoclassical, becomes evident in all instances of economic policy since apart from determining distinct behaviors among economic agents, it sets specific limits (both from the social and political points of view) to the different accumulation regimes. In this sense, the labor market turns out to be the transmission box that links the economy as a whole with the well-being of households, establishing within the existing institutional framework—defined basically by policy and social relations—the levels of equity as well satisfaction of material needs of the population.

The establishment of these levels are pointless if the economic analysis does not factor in the structural conditions of the economy, defined by a great many aspects such as the type of private enterprises, their ownership structures and global integration, the targeted markets, and the economic policy instruments employed—in its broadest sense—in the management of the economy.

In this chapter, we analyze the fundamentals underpinning the performance of the Argentine economy since the abandonment of the Convertibility regime, with the labor market and income distribution at the center of the analysis. We will attempt to break down the elements that contribute to a sustainable path of growth that, in turn, lead to a reduction in inequity levels in the country.

Toward this aim, this chapter is structured as follows. In the first section, we propose a particular taxonomy of enterprises on the basis of their market share and market orientation (internal or external). In the following section, we analyze the income distribution at the local and global levels, with the purpose of understanding how their evolution can determine (and in turn be determined by) the path of economic growth. In the

third section, we study the relation between the enterprises—according to the taxonomy previously proposed—and the labor market.

The fourth section, on the basis of these elements, briefly reviews two currency and alternative growth regimes: the Convertibility and the phase following the collapse of this scheme in 2001–2002. Having identified the specific characteristics of each phase, we will briefly refer to the sustainability conditions present during the growth period starting in 2003. The use of Employment Guarantee programmes as a tool to overcome the crisis and the results in Argentina are displayed in the following section. Finally, we briefly present the main conclusions.

10.2 The Microeconomic Fundamentals of Macroeconomics

One of the characteristics of the divide of economics into two relatively autonomous branches, micro- and macroeconomics, is the abandonment of the study of the theory of value and distribution in the context of the latter so that it is fully embedded within the setting of the former. While the causes underlying this event are numerous and complex, its roots are to be understood in the context of what is probably the key concept that gave rise to macroeconomics, that is, the principle of effective demand. Here is where the issue of the labor market and employment play a pivotal role.

Given that one of the main objectives of this study is to analyze the relation between the different growth patterns and income distribution, the link between the "quantity sphere" and the "price sphere" becomes the central topic of this study. In particular, the interpretation of Keynes' work (1936) by the Neoclassical-Keynesian Synthesis ended up striking out the theory of value and distribution from the realm of economic aggregates, a fact that becomes clear when analyzing the causes of "Keynesian effects" proposed by this school of thought: price rigidity. In this sense, the Synthesis elaborated a theory of quantities that subordinated the Keynesian effects to the short term, defined as the period of time when the stock of capital in the economy can be regarded as data (Patinkin 1965). But, at the same time, the validity of these effects rested on a flaw in the basic neoclassical adjustment mechanism, that is, price flexibility in general, and real-wage flexibility in particular.

If there is a temporal gap in which the speed of quantity adjustment is higher than that of the price adjustment, it could be easily explained by the Keynesian case. According to the neoclassical synthesis, the difference between the speeds of adjustment could not last and, therefore, in the

medium and long term, the world would behave in accordance to the neoclassical precepts. The role of Keynesianism was, therefore, limited to act as a stimulus external to the economy with the purpose of accelerating the convergence toward full employment equilibrium. Demand-side stimuli would help break the price rigidity that impeded said convergence, as long as such stimuli were properly calibrated to avoid triggering inflationary pressure. The close connection between some points raised by Keynes and the marginalism (Garegnani 1978) allowed for the Synthesis to incorporate the Keynesian case as a specific one within its general model (Hicks 1937; Patinkin, op. cit.), disregarding his important contributions and, above all, the main objective of his work, which was to prove exactly the opposite with regard to the generalization of mainstream economics.

However, the history of economic thought has set itself the task to prove that while Keynes (op. cit.) was developing the principle of effective demand at the very heart of mainstream economics, the Polish economist Michal Kalecki—starting from a theory of value and distribution imbued with a strong classical component—came up with the same principle.[2] The work of this author helped to continue with the study of economic determinants without the need to abandon the analysis of the conditions determining income distribution and price evolution. In fact, it was Kalecki who, after almost two centuries of economic thinking, reintroduced what was in Ricardo's own words (1817) the main problem of Political Economy: total income distribution, that is, aggregate income, among different social classes. Again, a clear invocation to the participation of wages in the economic surplus.

On these grounds, Post-Keynesian economics, the heterodox school of thought that came into being in Cambridge (England) by the middle of last century, quickly understood that the explanation of income distribution based on supply and demand considerations was inconsistent from a theoretical point of view, a fact that became evident in the late 1960s in Capital Controversies (see Pasinetti 2000). After this theoretical exchange between the mainstream thinking and some of the most prominent representatives of post-Keynesianism, this latest vision consolidated what could be called a hard core based on the following guiding principles:

1. Income distribution regained center stage in the economic analysis and was seen as the result of social, economic, cultural, and institutional processes that were not susceptible to be captured by supply and demand curves. For this reason, and due to the essential

problems of theoretical consistency pointed out by Sraffa (1960), in order to reach a solution that allows to set the normal prices or prices of production, it is necessary to employ a distributive variable (either the real wage or profit rate), the prevailing productivity techniques, and the level and composition of the social product as data. In this sense, there is a kind of sequential resolution of prices and income distribution, on the one hand, and of the normal quantities produced, on the other hand.

2. The quantities produced in both the short and long run are determined according to Keynes' principle of effective demand (1936) and in line with what was suggested by Garegnani (1978, 1979). According to this view of the performance of the economy, there is no systemic and endogenous shift toward a point of full factorial utilization along the lines touted by the neoclassical thinking, for example, the movement of the system is not explained by Say's Law. Thus, the performance is regarded as a constant phenomenon, and real-wage flexibility (e.g., Pigou's effect) is not viewed as a mechanism that eliminates it.

In this context, which could be defined as classical—in the sense of reintroducing the economic principles present in the works of Smith, Ricardo, and Marx—the main force that determines the dynamics of the system is the competition among the different fractions of capital, which results in a long-term trend toward equalizing the profit rates among the different branches of production. However, and in line with the post-Keynesian seminal work of Robinson (1946), the power of the market allows us to understand and analyze the evolution of specific economic dynamics where the forces of competition can find themselves inhibited, either in the short (e.g., throughout the different phases of the economic cycle) or in the long run. That is, competition in the classical sense is the center of the economic analysis, its reference point, while the power of the market and whatever derives from it are fundamentally in need of that well-defined central point that allows us to understand the differences arising when competition is not the rule of the economy. In this study, we consider that the power of the market allows us to establish a unique taxonomy to analyze small and open economies such as the Argentine case.

In particular, the proposed taxonomy consists of two dimensions. The first and most popular refers to the relation between an enterprise and the global market. To be precise, this taxonomy implies dividing enterprises

Table 10.1 Enterprise taxonomy

		Market	
		External	*Internal*
Market power	Price setter	EPS	IPS
	Price taker	EPT	IPT

into two sectors: one sector that operates in the global market and another sector that operates in the domestic market. The second dimension specifically refers to the "market power" and assumes that enterprises operating in a particular economy can be clustered according to their capacity to set their sales prices. Such capacity is always constrained by the existence of some type of barrier to entry, whether due to natural or technological factors, specific circumstances that characterize the enterprise as oligopolistic, or certain government policies implemented with such aim in mind. This implies that there are certain enterprises that have the capacity to set their sales prices (in general, within some margin in which barriers at entry are effectively at work), while there are other types of enterprises that lack the capacity to set the sales prices as they are faced with strong competitive pressures.

The aforementioned bi-dimensional taxonomy can be illustrated in Table 10.1.

According to the proposed taxonomy, four possible types of enterprises emerge (which are represented in the table above with the initials of each of the dimensions considered). Below you will find the main characteristics of each type. It is worth mentioning that this is by no means a comprehensive taxonomy intended to capture the myriad characteristics that enterprises may display, but it serves the purpose of explaining their roles according to the stability of the growth pattern, job creation, and, therefore, income distribution.

10.2.1 External Price Setters (EPS)

This type of enterprises are global leaders in terms of either technological development, market design and creation, proximity to natural resources, production organization, and so on, whose production chains and strategies are by and large globalized, adopting the character of multinationals. The capacity of these enterprises to set prices in the global market basically

arises from the process of product differentiation, either by means of establishing leading brands or playing a predominant role in terms of innovation.[3] In the past, these enterprises were headquartered in core countries and started opening branches in many countries to launch production at a global scale. Nowadays, they have different strategies of multi-regional integration of the productive process.

10.2.2 Internal Price Setters (IPS)

This is the most common type of enterprises worldwide. They are not only the result of industrial development policies that characterized the Welfare State, but they are also oftentimes the result of specific historic-economic processes. Many of them are born in response to problems of scale or natural monopolies, and they are influenced to a great extent by the economic environment as well as policies in general. We can categorize the Kalecki's enterprise under this type, which has the capacity to set sales prices in the local market and usually operates with a variable cost curve in the shape of "an inverted L", causing average costs to decline in the short run.

In general, declining average costs are explained by spare installed capacity due to an array of events such as: capital indivisibility, the need to address temporary expansion of demand, and protect market share, sunk costs, blocked markets, and so on. Oftentimes, the status of internal price setters is determined by two situations: the capacity to set the sale price of their products in the local market but also to set the prices paid to suppliers, consolidating an oligopolistic position "upstream" and "downstream". The cases of natural and regulated monopolies would fit under this category.

10.2.3 External Price Takers (EPT)

The case of price takers in the global market applies to most *commodities*, where the high level of supply diversification leads to the formation of competitive markets. They are usually companies that export primary goods or manufactured *commodities* and have a very low capacity to influence the final price of a product.[4] Also in this category are small companies that participate in less competitive global markets but in which they behave as price takers due to their inability to influence the set price.

Most of the exporters from the periphery, especially those in agriculture, are labeled into this category. Also a large portion of exporters of manufactures or goods with a high content of domestic labor that are converted into "commodities" in the process of trade are in this category.

Some services, such as tourism, perceived as a good alternative to broaden economic opportunities in countries with lower level of development, are price takers at international level.

10.2.4 Internal Price Takers (IPT)

Finally, this case responds to the existence of competitive markets at the local level. In general, they are small-scale enterprises and the fact that they are internal price takers is reflected not only in relation to the prices they are paid for their products but also to the prices they pay for their inputs, including wages. Examples of this type of enterprises are manifold; however, it is worth noting that when competitive forces are at play in the classical sense, it is possible that IPS become IPT and, therefore, any differential in their rate of return derived from their capacity to set prices is wiped out.

As you will see later on, the proposed taxonomy together with the market structure and income distribution can be employed to analyze how the choice of different exchange-rate regimes (they can typically be regarded, within certain constraints, as an economic policy decision[5]) determines growth patterns subject to different sustainability conditions, basically mediated by the labor market. Again, the gearbox that will link the economy with the well-being of households.

10.3 Income Distribution at the Local and Global Levels

In this section, we revert to the analysis of income distribution on the basis of two key aspects. First, we propose a particular form of interaction between the proposed taxonomy of enterprises, the market structure, and income distribution, which determines the dynamics of the struggle over distribution in the economy. Second, we explore some not-always-mentioned consequences of the relation between income distribution and global trade patterns.

One of the aforementioned aspects results from incorporating the functional distribution of income in the analysis. Its relevance becomes evident when we remember that the abandonment of the study of the theory of value and distribution also resulted in leaving the question of distribution subject to the study of inflation, while disregarding the complexity of understanding the link between growth and income distribution. Therefore, to better understand the dynamic of the struggle over distribution, it is essential to consider the link between market structure, exchange-rate regime, and income distribution.

Incorporating the functional distribution of income in the context described above lets us analyze the struggle between capital, rent, and labor, as well as intra-class conflict. In particular, with regard to the classical (in Ricardo's sense, op.cit.) struggle over distribution, the distinctive characteristics of the Argentine economy makes this phenomenon one of the most relevant to understand the macroeconomic evolution: EPS are mainly producers of wage-goods and carry out their activities on soils that possess outstanding natural characteristics that create significant land revenues (rents). At the same time, the external constraint affecting the economy and the well-known stop-and-go cycles (Braun and Joy 1968) make the struggle between capitalists, landowners, and workers a constant feature of the economic history of the country.

The history of intra-class struggle is even more complex. In particular, the process of currency appreciation and market liberalization that took place in the Convertibility regime, brought about severe consequences to the intra-class configuration of the economy. With regard to the capitalist class, a few IPSs consolidated their position, while many others were forced out of business by external competition (encouraged by the exchange-rate regime) or became IPT.[6] At the same time, there is a certain correlation between a company's place in the taxonomy proposed in this study and the type of job the company creates (Kostzer 2007).[7] Thus, when we analyze the evolution of the struggle over distribution in light of some of the elements mentioned above, it becomes complex due to the simultaneous occurrence of intra-capitalist and intra-worker struggles, taking place alongside a process of intra-class struggle over distribution in the classical sense. In this context, the exchange rate and the interest rate not only become references that are key in determining the market structure of the economy, but they are also one of the determinants of income distribution, both between as well as intra-classes.

While not attempting to further expand on a topic that has been discussed at great length since the origins of Economics to this date, it is worth noting, however, the relevance of income distribution because of its role in determining patterns in global trade (Chanthunya and Murinde 1998). The type of goods that a country trades, the global demand, the capacity to influence the markets, and so on, are structural factors to assess the capacity of the society to access foreign resources in order to finance the process of economic development, easing the existing constraints that may affect the economy in terms of external financing (FitzGerald and Vos 1989).

Prebisch (1986) contributed substantially to the economic theory with his analysis of the elasticity of goods in global trade between core countries and the periphery. Although we will revisit this analysis later on, the main constraint for periphery countries to market access resided in the low-income elasticity of exports to more developed countries, where you would even see the effects of substitution for goods with a higher degree of processing. This occurred when the income of core countries increased, as well as in the event of high-income elasticity of imports, due to the lack of response of the domestic supply of goods, particularly investment goods.

On the basis of the taxonomy proposed in the previous section, we could say that periphery countries are true IPTs, whose products experience price cuts when the supply increases. In short, producers do not benefit from technological changes. On the contrary, the imports of periphery countries, basically composed of manufactured goods with high-income elasticity as well as price—and, therefore, technological progress causes the demand to increase at a proportionally higher rate than the price reduction—soar significantly, each time the economy expands and the income level of the population rises.

In both cases, income distribution plays a key role. If a periphery economy grows, opening markets to new people, the demand for consumer durable goods also increases, creating new markets with potential for import substitutions. If the income of the highest deciles of the income pyramid rises, the potential for substitution is reduced, and the need for luxury goods increases significantly, mainly from companies that are global price setters. Thus, periphery countries would not only be affected by the external deficit as indicated by Prebisch (op.cit.), but it would even be operative in qualitative terms due to a double effect (both on exports as a result of higher demand for foods as well as on imports of manufactured

and durable goods) of the renowned Engel's Law, which states that as income rises, the proportion of income spent on food (and primary goods in general) falls.

The deterioration of the external deficit in the qualitative sense of Engel's Law is caused by the double effect mentioned above (inelasticity of the demand for foodstuffs and high-income elasticity of the demand for durable goods). As for exports, the growth differential in favor of core economies and against periphery countries implies that the demand of core countries tends to diversify in favor of goods with high-income elasticity and price, and against primary goods. Since the export basket of the periphery is mainly composed of the latter type of goods, as global income rises, the proportion of their exports in global trade decreases.

At the same time, many examples of economic growth in the periphery show that oftentimes greater dynamism is followed by a deterioration in income distribution. When this distribution, functionally regressive, is combined with a higher level of acquisitions by the top deciles of the income pyramid, it leads to an uneven increase in the propensity of the economy to import due to, once again, Engel's Law. Thus, when the growth process is likely to perpetuate distributive inequalities rather than incorporate traditionally neglected low-income sectors into the system, it stumbles upon its own limits in the deterioration of the external deficit caused as a result of the demand pattern of the beneficiary sectors.

The pattern becomes unsustainable, regardless of whether Kuznets' inverted U is based on theory or is mainly an empirical regularity.

10.4 Enterprises and the Labor Market

Based on Rima's analysis (2000), the enterprises that qualify for each of the defined taxonomies have a different relation with the labor market, and the institutions brought into being from these interactions are also different. Ex ante, enterprises define the production they expect to realize into the market and, based on that, the number of workers and the skills required in accordance, by and large, to an institutionally defined wage.[8]

Price setter (PS) enterprises (both for the domestic as well as those that face external market), which—as we mentioned before—oftentimes have the capacity to set the price of the inputs they purchase, usually have a close relationship with unions and workers' rights activists. This does not mean the absence of conflict between capital and labor, but basically that salary increases either have an impact on prices or are absorbed by

productivity gains. In the same way, productivity gains, at least to a certain degree, impact on wages, not only as pocket money but also oftentimes in the form of additional perks. This type of enterprises, which nowadays is the select choice for wage-earners, offers significantly higher salaries than other companies for equal qualifications, playing down the relevance of human capital when explaining wage differentials. As Rima (op. cit.) indicates, unions have a symbiotic relationship with PSs in any market, whether domestic or external. At least while PSs retain the capacity to set prices, as we will see later.

At the same time, PSs encounter a very elastic demand in relation to the income of the population and the wage increases they offer (in general, they are overcompensated with productivity gains), and they are part of the aggregate demand they face. In a closed economy, this causes the pattern to become self-centered and sustainable, as long as the typical constraints of the different cycles do not materialize. In this context, increases in real wages may occur, while at the same time the functional distribution of income deteriorates in favor of capitalists, hampering future growth prospects.

In most cases, *price taker* (PT) enterprises, which operate with diminishing returns, and for which increases in the income of the population lead to a fall in demand for their products, as they specialize in inferior goods, are forced to hire workers under conditions unrelated to the productivity of the company (normally, low), oftentimes offering wages set in far-off institutional spheres, which creates a zero-sum game with corporate profitability. Faced with these constraints, PTs turn to survival strategies such as tax evasion and hiring without complying with applicable laws, with the well-known risks, creating, in turn, implosive effects in the medium term that end up impacting on their own businesses.

Notwithstanding this clear-cut differentiation, there are transmission and communication channels between PS and PT that can go through stages of virtuous complementarity, much like in processes of sustainable economic growth, where the former enterprises pull the latter, incorporating new workers into the different labor market segments, or revitalizing the process as a result of the demand of PSs for goods and services offered by PT.

This structure induces a process of polarization among firms, with those that generate “good jobs”, and others that are incapable of this. This can’t be explained by the “human capital” school of economic thought or

by those that understand labor as an amorphous pool of undifferentiated individuals, and think on average firms and average individuals.

If the exchange rate appreciates in small economies, firms that face foreign competition, may shift from IPS, due to the de facto barrier that a competitive exchange rate implies, to IPT, reducing the number of good jobs in the economy, and introducing atypical arrangements with workers such as two layers collective bargaining, extreme flexibilization of lower skills activities, or, worst, outsourcing a number of tasks of the productive process to smaller firms, that become the "buffer" of the profits of the former IPS.

At the same time among the old IPTs, heterogeneity increases, reducing the scope for labor market policies, due to the different context firms face. Many of them are forced to close down or reduce the number of workers. The scope of public interventions is reduced, and just a few have proven to be effective in most of the experiences.

10.5 The Outlined Facts of Two Divergent Macroeconomic and Exchange-Rate Regimes

In this section, we will analyze the different growth patterns or accumulation regimes that characterized Argentina between 1991 and 2009. The natural approach to study this period is based on the exchange rate regime and, thus, we will compare the Convertibility regime (1991–2000) with the Post-Convertibility (2003–2009), making use of the theoretical elements outlined in the previous sections. The main focus of this section is to show how each growth pattern is directly linked to employment and the income distribution, being energized by it and, in turn, providing fuel to it, in a dynamic and fluctuating process where there is no one-way nexus between growth and distribution. At the same time, the income distribution oftentimes can be the main economic and/or political, and social constraint of the accumulation regime, determining the conditions for its sustainability.

After the Great Depression, the country adopted an import-substitution industrialization (ISI) model, where the dynamic between capital and labor became even more complex and sophisticated. Wages were no longer a mere production cost and became a revitalizing factor of the domestic demand, in a process of growing social integration and articulated both in sectors and spatially, with a State increasingly becoming the guarantor

of basic levels of social protection and security, while actively overseeing the import-substitution process through the establishment of industrialization programs funded privately or directly through public investment in infrastructure or public enterprises. This situation, together with the role of the State, caused the primary distribution of income to reach levels similar to that in developed countries, almost evenly sharing the social product between capital and labor. In this sense, the State not only played a role of regulator of industrial and social relations, but it also adopted counter-cyclical measures during downturns or in the most neglected areas. For this reason, we will call this type of ISI process regulated-ISI in view of the active role the State played in growth planning and local economic development.

Notwithstanding this "virtuous" growth pattern of ISI, one of its weaknesses was rooted in the distribution of income and the consumption patterns arising from it. In fact, economic growth coupled with equity and the integration of a vast mass of the population that had been previously excluded from accessing more sophisticated products in the marketplace, exerted further pressure on the external deficit in the qualitative sense indicated by the Engel's Law. On the one hand, food exports—insofar as the model consolidated and workers' benefits increased—put pressure on manufactured goods as a result of imported inputs and capital goods, and additionally on the external deficit, which was dealt with by resorting to periodic devaluations that restored the current account imbalances by means of expense cuts. This chronic behavior, which characterized the so-called *stop-and-go* cycle, was partially ingrained in the way it impacted on the distribution of income by means of the decline in real wages and the appropriation of the surplus by exporters, apart from the State, which oftentimes partook in this process through exchange rate differentials or tax withholdings on exports.

The characteristic that distinguishes this process from the agro-export model is the integration of a new social class, comprised of the owners of companies that cater for the local market, ascribing an element to the struggle over the distribution that makes it resemble the conflict explained by Ricardo (op.cit.) at the beginning of the nineteenth century in England during the Industrial Revolution, with the features of an open and peripheral economy. Local capitalists, who benefitted from the rise in the purchasing power of the working class, needed imported inputs and cheap food to maximize their profit, while the key motivation for exporters from the *Pampa Húmeda* was to increase the price of their products, regardless

of the impact that may have on the local market as this was not their intended market.

The ISI gave rise to many IPS enterprises in view of the tight domestic market and the protection these companies enjoyed, oftentimes stemming from rules and regulations based on production, import, and even credit quotas. As we mentioned in this section, the interaction between unions and IPS was collaborative and symbiotic, as these IPSs have two alternatives: either wage increases are translated into price rises or absorbed by increases in productivity, in those cases where *Fordism*[9] would make that feasible. IPSs, which benefitted from the low price of exportable/wage primary goods, marked up their prices, given the exchange rate differentials; therefore, the impacts on real wages, based on the traditional two-sector model of the 1960s and 1970s, are insufficient to explain the deterioration of the recessionary effects of currency devaluation to balance the current account due to a prior overheating of the economy.

From the point of view of income distribution, any change that may benefit manufacturers of exportable goods, whether a rise in international prices, tax cuts, and so on, would be to the detriment of local capitalists and salaried workers, thus the similarity with what Ricardo (op.cit.) described but also the difficulty in delineating a more articulated and inclusive economic and political model for the country.[10] Within the ISI model, IPT (mainly small and medium-sized enterprises, supplying consumer goods and services, or suppliers to IPS) grew significantly, generating a substantial share of the aggregate demand and behaving over long periods like IPS with regard to wages, as they followed the behavior agreed upon through a centralized collective bargaining process. This took place during the expansionary phase of the cycle, but once it started to contract or a sudden devaluation came about, all the IPTs suffered the impact of the exchange-rate hike and the economic contraction. They were the first to face a credit crunch, which forced them to adjust their workforce, encounter higher costs for both domestic and imported inputs and, eventually, face a drop in sales. In short, the ensuing adjustment basically fell on salaried workers and IPTs. It impacted directly on income distribution, both functional as well as personal.

The above summary of the rationale behind the regulated-ISI is vital to analyze the two regimes in effect in Argentina between 1991 and 2009. First, not only because during both periods the industrialization of the domestic economy was deeply altered but also because those alterations in the market and production structure allow to close the analytical cycle

between income distribution and exchange-rate regime that is pertinent to this work. In this section, we imply that the ISI took different forms, and even contradictory, in both regimes. During the Convertibility regime, the ISI was, in fact, a "regulated import-substitution deindustrialization" (Regulated-ISD), thanks to the unrestricted trade liberalization, the establishment of an exchange-rate regime extremely adverse to the interests of domestic businesses, and, above all, the complete withdrawal of the State from its active role in the design of and participation in the growth pattern, which became evident with the wave of privatizations and the drastic reduction in public investment.

During the Post-Convertibility, a phenomenon we will call Induced-ISI took place. The Induced-ISI differs from the Regulated-ISI essentially in the role the State plays in the design of the growth pattern. While in the Regulated-ISI, the State plays a leading role mainly through its participation in public enterprises, and the expansion and management of public investment, in the Induced-ISI, the State focuses on fine-tuning the right incentives so that the private sector drive the growth pattern, usually by means of price incentives, reining in exchange rates, granting subsidies to specific sectors, funneling credit for investment, and so on. While it is evident that the divide between Regulated-ISI and Induced-ISI is never clear-cut in practice, it helps to enhance our analysis. Having determined the distinction between the different types of ISI, we will now proceed to explain the dynamics of each regime.

10.6 The Convertibility Regime

The Convertibility regime is to be grasped in light of the inflationary and hyperinflationary spiral that affected the Argentine economy during the late 1980s and early 1990s. Against the profoundly disruptive effects that inflation had, not only from the economic but also the socio-political point of view, the exchange-rate regime aimed to provide a nominal anchor to help stabilize prices. However, the renowned effectiveness of the new exchange-rate regime was not simply due to its functioning as an anchor but also, and fundamentally, to its own extent and real effect on the economy. The sharp currency appreciation exerted a disciplinary effect on the different social actors through a series of adverse real effects that set a milestone in the economic history of the country.

The Convertibility regime prompted a change in the market structure and brought about an IPT-type business model as domestic enterprises

lost their capacity to operate as IPS, but also Domestic Price Setters (DPS) being unable to compete price-wise with imports flooding the domestic market. Thus, currency appreciation fostered external competition and tore apart most of the existing production structure. Even though the exchange-rate regime was accompanied by deep labor market flexibility that contributed to dismantling any type of power on the part of unions, the exchange-rate policy played a key role in creating the adequate market and production structure in order to implement this kind of pro-market reforms.[11] The first knock-on effect of the exchange-rate regime on the functional distribution of income was an upward trend in the unemployment rate, which led to an increase of the benefits' share in the national income. In turn, the elimination of a significant portion of IPS enterprises from the market, or their conversion into IPT, thwarted the virtuous dynamic between this type of enterprises and the formal salaried sectors described.

In conclusion, the process of Regulated-ISD led to a pattern of distribution that was incompatible with a global integration of the economy and could only be sustained through mounting foreign indebtedness. When foreign investors heralded the end of the process, the huge wealth-effects of the 2001–2002 crisis did nothing but expose the deep contradictions between the production and distribution patterns brought about by the exchange-rate regime in effect.

10.7 The Post-convertibility

The 2001–2002 rate hike substantially altered the growth pattern of the local economy and, with it, the market structure. At the same time, the changes in the growth pattern created a distribution regime markedly in contrast with that of the Convertibility but whose instability was associated with the struggle over distribution, which was offset in the previous period through an upsurge in the unemployment rate. In the short run, devaluation and the ensuing hike in local prices entailed a major improvement in the corporate rate of return, both for exporters as well as domestically oriented companies. At the same time, the implementation of export retention taxes allowed to partially separate the purchasing power of wages from their dollar-denominated value, helping to prevent the domestic market shutdown (owing to the deterioration in the purchasing power that would have resulted from the new currency parity), and at the same time, keep the competitiveness gains arising from the currency depreciation.[12]

The new exchange-rate regime prompted a process of gradual transformation of domestically oriented companies, which mutated from an IPT to IPS. In this way, and in spite of the initial strong deterioration in real wages, the new growth pattern contributed to the virtuous articulation between IPS and the rise in real wages in the formal sector. These increases had a carry-over effect on the informal sector, which at the same time benefitted from a soaring increase in the minimum wage, determined by the Minimum Adjustable Living Wage.[13] Thus, the income policy together with a restoration of the bargaining power of trade unions (mainly due to its virtuous articulation with EPS and IPS) created a pincer effect on the evolution of wages, which were compelled to surge because of the rise in both the wage floor and wage ceiling.

The new exchange-rate regime had a two-pronged effect on the growth pattern: the aforementioned process of transformation of IPT into IPS and, at the same time, a growth process powered by the manufacturing sector, rather than the service sector, contrary to what had happened during the Convertibility regime. The gains in external competitiveness arising from the currency depreciation worked as a strong incentive for the domestically oriented manufacturing sector. The higher benefits that this sector reaped let it finance its own growth process in the way indicated by Kalecki (1977). In turn, the leading role goods played in the growth process and a labor market regulatory reform process altered the way it operated due to the higher visibility of this type of growth pattern. In particular, the distinctive characteristics of manufacturing companies, compared to those of service companies, made it difficult for the former to hire without abiding by the legal regulatory framework in force. The opposite occurs with service providers since their production pattern makes them more prone to engage in outsourcing practices.

The Post-Convertibility cycle exhibited a "virtuous" growth pattern. Despite a substantial deterioration in all the income distribution indicators as a result of the devaluation in 2001–2002, the phase that followed showed that the differentiated exchange-rate structure met the necessary prerequisite of competitiveness for economic growth, both in terms of foreign markets as well as the effective protection of local markets. That is, the comparative analysis of the Convertibility and Post-Convertibility regimes showed that the level of the real exchange rate is a necessary, if not sufficient, condition for economic growth. The difference between being necessary and sufficient stems from the most basic principle of macroeconomics: the *effective demand* as described by Smith. That is, the level of

the real exchange rate determines the level of corporate profitability. A very low level, such as that of the Convertibility, is a sufficient condition for an economic depression due to the unfeasibility of embarking in a myriad of new business ventures.

However, a high level of the real exchange rate simply guarantees profitability from the point of view of prices, but not with regard to quantities. If effective demand is not sufficient for the company to operate at its installed capacity, the profitability associated with the exchange rate will be just notional. That is why it is inappropriate to directly associate economic growth with the exchange rate level: while an overvalued real exchange rate effectively works forcing companies out of the market, a higher exchange rate level functions only as a welcome call. Whether such call is answered depends, ultimately, on the effective demand which determines the companies' profit expectations through the exchange process, after having determined the fixed capital utilization rate and, therefore, the staffing level required to that end.

By 2007, the context in Argentina was characterized by deep tensions over income distribution, mainly triggered by the bubble in global commodity prices. The evident link between the Argentine export basket and the consumption basket of salaried workers, coupled with the existence of a significant natural source of revenue in the primary sector, initially led to a distributive struggle that exerted considerable upward pressure on prices and curtailed the vicious cycle mentioned above. While this study does not aim to provide a definite answer on the matter, some of the concepts we elaborated on earlier can contribute to understanding the limits of this type of scheme in the context of distributive struggles.

The distributive struggle led to a downward pressure on the real exchange rate that impacted on profitability. In this way, the virtuous cycle between IPS and wages and employment began to be eroded as the exchange-rate parity deteriorated and prompted a reversal of the transformation process of the market structure indicated above. As real appreciation drew on, companies would lose their capacity to set prices owing to competition from imported goods. Although this trend toward appreciation was not clear-cut, especially if taking into account the levels during the Convertibility, it took center stage in the discussion on the sustainability of the new expansionary cycle of the Argentine economy. Thus, the exchange rate appreciation put pressure on IPSs in two ways: it eroded their dominant position in the domestic market as they had to compete with imported goods and undermined their profitability, trimming down

their investment capacity via retained earnings.[14] At the macro level, the downward trend of the real exchange rate brought about another problem: an import de-substitution process, disguised under the favorable exchange terms.

A devaluation creates the usual tensions between the working class and capital as a whole. However, since in this study we have used a taxonomy that classifies companies according to their capacity to set prices and their market orientation, giving way to distinctive relations between capital and labor, it is worth analyzing that dynamic within that context, while keeping in mind one of the most important features of the local economy: the central role of wage-goods in the export basket and the presence of land revenue in tradable goods.

First, the wage struggle caused by the devaluation is in part mitigated by the virtuous dynamic between IPS and unions. However, in the case of Argentina, the struggle between wages and prices is mainly prompted by the exchange rate pass-through to domestic prices on the part of external price takers (EPTs). The pressure to level domestic prices with international prices denominated in local currency are not eased in contexts of real appreciation—that is, contexts of soaring domestic inflation—due to the existence of land revenue in EPT and the small share of wages in their overhead costs. The land revenue allows EPT to compete in the global market at real exchange rate levels that are substantially much lower than those of the domestic market-oriented sector (Diamand 1972).

Second, while a devaluation does not create tensions between the salaried sector and EPS, this is not the case when it comes to IPT. In particular, when the virtuous dynamic between wages and prices of IPS turns into a dynamic of high inflation, the profitability of IPT starts to deteriorate. If this trend continues, IPT will most likely be forced out of the market owing to inflation, with the resulting negative effect on activity levels and employment. This type of inflationary equilibrium characterized by the withdrawal of IPT from the market can even lead to intra-worker struggles as a result of the dynamic differentiation in wages it creates: while workers in IPS can maintain and even increase their purchasing power in inflationary environments, workers in IPT suffer real losses due to a decrease in real wages followed by a rise in unemployment. Thus, the working class in IPT starts to erroneously believe that the wage demands of workers in IPS—rather than the low productivity of IPT—are to blame for their wage deterioration and job losses.

Therefore, it is unclear whether the management of the exchange rate is an appropriate tool to address the conflicts arising from an inflationary acceleration. If we consider that one of the main distinctions between IPS and IPT is the difference in productivity in favor of the former, the modernization of the IPT sector seems to be a necessary condition to avoid wage deterioration and job losses resulting from a real appreciation of the exchange rate. The difference between Regulated-ISI and Induced-ISI is key to understand the role the State should play in virtuous growth cycles that may be neutralized by struggles over distribution.

However, and as we have shown before, it is in general the exchange-rate regime itself that determines the capacity of companies to set prices. In many cases, devaluation leads to a de facto protection against imports, granting a company a high enough level of profitability, once achieved the desired utilization rate of installed capacity, to make the necessary investments to substantially increase its average productivity level.

In this sense, the bigger the IPT sector is in relation to the IPS, the higher the probability will be that a struggle over distribution ends up eroding the foundation of a growth process, by way of real appreciation, a drop in gross investment, and an unemployment rate hike caused by the gradual withdrawal of IPTs from the market. It is for this reason that when the high real exchange rate does not lead to a considerable change in the average level of economic productivity, that is, when the Induced-ISI does not bring about a significant change in the local market structure, the involvement of the State becomes vital to modify the sustainability of the regime. In particular, it is necessary that public investment be oriented toward low-productivity sectors in order to alter their IPT nature.

Income policies must be oriented toward the most disadvantaged sectors, avoiding the usual tax exemptions that do not alter the disposable income of these sectors due to their high levels of informality (both in terms of income and expenses) but rather free resources in sectors with a high propensity to consume imported goods and/or hold their savings in international currency. At the same time, these policies must contemplate potential intra-worker struggles. Policies oriented toward the low-income sector will tend to mitigate these struggles as long as they improve the position of the top deciles relative to the bottom.[15] Here is where the crucial role of Employment Guarantee Policies, with a rights-based approach, flexible and universal, are the only way of balancing the economy, not only at economic level but also at social and political.

10.8 The Policy Recommendation: Full Employment as the Solution

This somehow long introduction on economic structure, is without going into depth on the issues of exchange rate regimes, and how they can reinforce or change the market structure, changing the condition of domestic enterprises from IPS to IPT, just with an overnight decision of the Central Bank or monetary authority from a trade partner country—or competitor in external markets—what can be passively assumed, or actively by generating a process of competitive devaluations, in a never-ending spiral.

In the following sections, we will try to show how these strong structural constraints and pervasive dynamics of income distribution and market structures, can be partially controlled by the implementation of employment guarantee programs (EGP), where the state plays the role of "Employer of Last Resort". Some of the more political, social, and regional advantages of these types of interventions were largely explained in the literature, initially by those enrolled in the post-Keynesian school of thought, especially from the University of Missouri at Kansas City during the early twenty-first century (see CFEPS various publications).

These ideas are not a simple theoretical exercise. They were implemented in Argentina after the crisis of 2001/2002 that ended a decade of neo-liberalism economic policies and after being the poster child of the Washington Consensus. The results and impacts from the micro perspective were extensively exposed by various authors.[16] Here, we will explain how a large public intervention reduces the process of polarization, while making effective a schema of social protection, without harming smaller firms that constitute the Domestic Price Takers (DPT), especially those with informal linkages.

10.9 The Development of the Crisis

As expressed previously, the weak link in an economy where PS and PT firms interact together, is the level of aggregate demand and the level of investment PTs are able to achieve, in order to maintain levels of employment, or at least, the profits that the owners need to survive.

If there are decreasing returns to scale in the PT universe, the only way to enlarge production, hence, maintain or increase levels of employment is

by means of expanding the productive capacity. In order to induce investment, rather than previous savings, as the neoclassical theory suggests, the expectations of realization of the production, or proceeds from the economic activity, are a key factor. This is highly dependent on the domestic demand and the level of capacity utilization of the IPS firms.[17]

During the gestation and development of the crisis, the conflict between capitalists and workers moves from the center to the background, while the intra-capitalist struggle emerges, precisely due to the use by the PS firms of their market power, against the PT firms, that try to defend themselves in very ineffective ways, bearing on their accounts the part of the cost of the crisis, that the weakened working class already paid.

In "steady state" periods, or "normal times", the profit rate of the PTs would tend to be reduced, as they approach to the diminishing returns, reducing the investment opportunities. Higher income groups will slowly move toward goods and services with high-income elasticity, higher import content, and imposing additional pressure on the current account, while the rest will try to defend their purchasing power doing the opposite. They will move to "second brands,[18]" or substitute part of their flexible expenditure patterns. The process is slow, but steady, until an external shock or another type of event triggers the crisis, when IPSs suddenly reduce production, hence employment, using many of the different instruments they have: suspension of workers, reduction of shifts and working hours, forced retirements, or holidays, and so on, even exercising their monopsonic power, and delaying payment to suppliers, nurturing the crisis. At this point, massive devaluations and other "traditional" orthodox measures are not capable of changing the situation. They tend to worsen it, by reducing the level of monetization of the economy, increasing interest rate, and mainly inducing capital flight.

Supply of exports, especially from agriculture, don't react in the short run due to either land constraints or the agricultural calendar imposes a delay. Non-traditional exports require longer-term prospect, if not investment, and the "expenditure shifting", expressed as the initial result of the new terms of trade, rather is "expenditure switching".

In this respect, the main constraint is not only the economy, rather the social and political situation. In the case of Argentina, the democratic institutions were on the verge of collapse. In other countries with similar experiences, coup d'état took place.

10.10 Employment Guarantee Policies (EGP) in the Crisis

The crisis emerged. Excess capacity is widespread into the overall economy and the new relative prices, either the result of depreciation of the currency or the new expectations of DPT, are not enough to move again the economy, is where EGP showed their effectiveness.

First, and foremost, the EGP is a way of introducing money into the economy, via a fixed wage paid to all those that want to work in the provision of social goods and services, a minimum number of hours. This boost to a depressed domestic demand, either reduces the lay-off rate in the economy or helps to recover the level of economic activity, reintroducing in very short periods of time workers in the private sector. In the case of Argentina, after 2002, it was very clear to see that those regions where the impact of the EGP "Plan Jefes" was higher, weren't the ones aiming to the export market rather those where the average income was lower and more dependent on the popular consumption. The logic is quite simple and can be found in the Keynesian multiplier: where marginal propensity to consume is higher and where marginal propensity to import is lower, the higher the monetary impulse will reproduce itself.

IPS firms will maintain their skilled staff, in the process that Abba Lerner[19] called "labor hoarding", waiting for the recovery, and as soon as the domestic demand increases, and the expectation of proceeds rise, the number of workers moving from the EGP to the production, will speed-up. This will happen with the DPT soon-after, in a virtuous circle, until there are no workers in the EGP, or those that are there have little chances of incorporating to the productive process due to other structural reasons.

Up to this point, it is clear and easy to explain why the EGPs are effective and efficient to restore the levels of domestic activity in economies that undergo a crisis of demand, with excess capacity.[20] In the next section will be sketched how a permanent EGP, as an entitlement, rather a mere social policy or transfer, flexible and open, can work as an automatic stabilizer to reduce the temporal or seasonal fluctuations, as well as the amplitude of economic cycles.

10.11 Stylized Facts on Employment Guarantee Programs (EGP) as an Automatic Stabilizer of the Economy

Taking into account the structural characteristics of firms as stated above, and the dynamic that imposes to the economy, the use of a policy tool that would help to reduce volatility in an economy, at the same time that will maintain a minimum level of well-being in the population, to reduce the social and political vulnerability of the system, can be of central importance.

Unemployment imposes a series of difficulties to the economy, the society, the family, and the individual much larger than those that are evaluated at sectoral level.[21] From the economic point of view, the impact on domestic demand and the stability of proceeds' prospects, unemployment sends signals to produce a negative feedback to those that invest, jeopardizing future endeavors. Investing in the framework of rising unemployment, or at least, declining of employment, is not a typical behavior, especially for IPT, that in general are risk averse. In the case of IPS firms, some of the projects are postponed, due to the new increase in terms of idle capacity.

If the DPTs don't invest due to low expectations, the possibilities of increasing employment—hence domestic demand—are reduced and, at the same time, pressures to lower wages in the unskilled or unprotected sector gather, inducing a declining spiral.

Simultaneously, austere behavior characterizes families and individuals, because the fear—or the fact—of losing the job, pushes other members of the household, the so-called secondary workers, into the labor market, increasing more than proportionally the unemployment rate. If the father worries about preserving the income, totally or partially, the youngsters may even quit school to support the household income.

In turn, the emergence of unexperienced workers with low skills induces rent-seeking behavior by some entrepreneurs, in order to compensate the fall in proceeds, substitute older workers—mainly head of household—for younger individuals at a fraction of the regular wage. This comportment tends to be generalized in the IPT firms as a survival strategy.

Here we won't discuss the devastating impact on individuals and their families of the unemployment, but they are very well analyzed by several

other disciplines other than economics, not to talk on the skills obsolescence it generates.

EGPs tend to be implemented when the crisis erupted, in general very late, when damage has been provoked to smaller firms, local economies, and the families of the most vulnerable, even loosing many of the human development gains, that take long time to achieve, such as schooling of youngsters or even health gains.

Not a minor problem is the inertia that the implementation of a massive EGP has at administrative level. This type of intervention involves portions of the population that are counted by millions and, in general, widespread across the country, which requires a massive involvement of the state apparatus in order to be effective. The traditional bureaucracy doesn't have the skills to analyze projects, distribute the benefit, evaluate performance, and so on. It is not a difficult task but requires a more sophisticated interaction among the different areas of the State in order to go beyond the simple "unemployment benefit" where the only skill needed is to write a check or organize a transfer to the bank account of the individual.

Starting with low levels of unemployment, EGP can be implemented with lean administrative structures, clear guidelines, and detailed assessment of the projects proposed. This allows to train and specialize teams that will help, when unemployment hikes, to have a quick and certain response that will mitigate the depth of the crisis. Let's try to outline some stylized facts around the mechanics of the EGP before the crisis erupts.

When the economy slows down, the first indicators are a reduction in the level of economic activity and accumulation of inventories. When the stock of goods reaches a certain level, the adjustment starts with a reduction of working hours or shifts. This impacts strongly on the disposable income of households, further reducing aggregate demand. Obviously, this affects both types of firms (PS and PT) in a similar recessionary effect. Since IPSs can adjust their prices, and the reduction of production increases unitary costs due to a larger need to cover the fixed, the overall economy goes rapidly into stagflation, for example, higher prices with stagnated economic activity.

The sooner the EGPs are in place, the higher the chances to mitigate the recessionary effects. Those in the EGP will maintain their demand for wage goods and those produced by the DPT firms, precisely the most vulnerable in the economic structure.

If the demand from the IPT sector remains stable, even if there is no investment in the sector in the short run, the idle capacity of the IPS sector will stop the decline, compensating the oligopolistic tendency to rise prices.

The EGP beneficiaries will constitute a pool of workers from the private sector that will be able to join into economic activities, mainly in the proximity of the places where they live, or by producing goods and services that can easily be appropriated by their same community such as childcare, social infrastructure maintenance, community kitchens, bakery, bricks production, self-construction, and a wide range of services that don't have a market price, due to the low income of those areas, hence, not competing with the private sector in those productions.

Not only will this help to maintain skills of the individuals—it is well known that one of the main constraints to reenter into the labor market is the length of the unemployment—also boosting the job training in order to increase the employability of those recruited in the EGP.[22]

When the economy recovers, or after the shock—from whatever source—peaked, the workers in the EGP will reenter in the private sector, with the same or more skills than before, in a smooth process and shorter delay than the unemployment subsidy.

The EGP should be flexible, with easy entry and exit, even for shorter periods of time than one month or 15 days. That will reduce the level of competence with small-scale firms or those that are very much involved in seasonal activities, such as the ones that happen in rural areas.

The EGP adapted to seasonal activities in the rural areas such as the NREGA (National Rural Employment Guarantee Act) of India, proved to be quite effective, facing only constraints in terms of the implementation due to the administrative structure needed at the same time. Implemented as a buffer stock in low unemployment periods, these problems can be more easily solved.

There are, however, certain challenges that should be addressed in the process of implementation. On the one hand, it is the level of the minimum wage and the reserve salary of workers in order to join the program. Minimum wage policy[23] is a very efficient instrument to guarantee minimum levels of remuneration to fulfill monetary needs by households. If the statutory minimum wage is high enough, there are no major problems to establish one around three-quarters of two-thirds of that value for the EGP in exchange of a number of working hours, enough to avoid double employment by the beneficiary.

The problem emerges when the minimum wage has been low, not binding, and for a long time. This imposes certain constraints to define the benefit and may have contradictions with the smaller and less formalized firms in the local economies. But never these interventions may affect the IPS firms.

10.12 Conclusions

The debate on the drivers of growth during the Post-Convertibility centered on conflicting hypotheses: while according to some analysts the external conditions (e.g., the so-called tailwind; Izquierdo et al. 2007) were the only factors to take into account, others considered that a policy of maintaining a certain level of the real exchange rate (e.g., the "real competitive and stable exchange rate", Frenkel 2009) was the reason behind the remarkable growth between 2003–2008. In order to avoid single-cause explanations, the purpose of this study is to incorporate into the analysis of the global context and the exchange-rate regime, issues that are key to understand the macro and micro dynamics of a small and open economy like the Argentine, that is, income distribution and market structure.

On the market structure, we propose a particular taxonomy that classifies companies based on their market orientation (internal or external) and their capacity to set prices. First, we argue that the exchange rate regime is not only a variable that impacts the profitability of companies oriented to the external market but also a factor that determines the structure of companies oriented to the domestic market. A high exchange-rate regime creates a level of profitability that allows a company, under certain circumstances, to switch from being a price-taker (IPT) to a price-setter (IPS). In this way, the change from IPT to IPS that took place after the devaluation in 2001 can be interpreted in the light of the taxonomy mentioned above and its relation with the exchange rate regime. On the other hand, there is a significant difference between the capacity to set prices and the relation with the salaried labor, which explains the virtuous growth dynamic with improvement in the functional distribution of income that occurs during the Post-Convertibility.

Within this process, the analysis of the evolution of income distribution is key, not only because of its relevance as to the internal sustainability of the expansionary regime but also its external sustainability. In particular, the virtuous growth dynamic that results from the interaction between

IPS and unions does not necessarily imply an improvement in the personal—and even functional—distribution of income. Thus, the sustainability of this growth process is not at all guaranteed, and there are potential sources of instability. One of the main sources of instability lies in the twofold problem of the external deficit that affects economies like the Argentine: on the one hand, the lack of diversification of the export basket, coupled with the leading role of primary goods, leads to the deterioration in the participation in global markets as per Engel's Law; this, in turn, can also impact the external sustainability through more imports, whenever the inequalities in terms of personal distribution of income widen, benefitting groups more prone to consume imported goods.

Another source of potential instability stems from the struggle over distribution that may be triggered by cost shocks, even so when these types of events exacerbate the contradictions inherent in the market configuration analyzed before. In particular, when the cost shock impacts exports, the contradictions between EPT, IPS, and IPT can hamper the growth process. The deterioration in the exchange rate parity in contexts of struggles over distribution can lead to a reversal of the process of transformation of IPT into IPS and, in turn, trigger an income struggle not only between but also intra-social classes. The proper analysis of these contradictions helps to understand that the solution to this type of dynamics does not come from the nominal side of the economy, for example, the management of the nominal exchange rate but rather the real side of the economy, for example, by changing from an Induced-ISI to a Regulated-ISI model.

The implementation of EGP interventions from early stages, well before the crisis explodes, are an efficient and effective way of preventing the disruptive effects that the distributional conflict in a context of rapid exchange rate movements will impose to the overall economy. The reduction of the costs of massive expulsions of core workers from employment, and the additional pressures on the supply of labor force—with further reductions on wages and aggregate demand—will diminish vulnerability and increase certainty, taking care of the basic needs of the population.

A modern state can't ignore its role in helping to define the levels of income distribution and satisfaction of needs in the commodity sphere of its population. The past of Argentina showed us a path, but more evidently and conspicuously is what the delayed recovery in the countries that constitute the so-called Center are showing under the label of austerity.

Notes

1. For a critical review of the U hypothesis of Kuznets, see Saith (1983).
2. It is worth noting that the term *classical* is not used in Keynes' sense (1936), but rather to refer to the founding fathers of Political Economy, such as Smith, Ricardo, and Marx.
3. Both innovation and the establishment of leading brands may stem from a myriad of factors but almost always intending to generate quasi-rents, in general, unrelated to the production process and rather centered on factors sometimes as subjective as advertising, fashion, or patents and royalties.
4. The term *commodity* refers mainly to goods that have no differentiation, in general, subject to minor processing. However, the definition has changed over time. A large number of manufactured goods, even embedded with sophisticated technology, are regarded as commodities in the aforementioned sense in global markets. Oftentimes, they are inputs to EPS, which retains the quasi-rents created.
5. With regard to the capacity of policymakers to choose the exchange-rate regime, the reader can refer to the work of Frenkel and Taylor (2006). There, the authors basically show that the renowned trilemma of monetary policy, which indicates that in situations of free capital mobility, the real exchange rate becomes endogenous (due to the fact that monetary authority is to choose between managing the nominal exchange rate and inflation) is by and large not valid.
6. Traditional "two-sector" or "three-sector" models are not sufficient to analyze complex economies, since many of the "exportables" are allocated in the domestic market, not at the "law of one price" as most of the authors suggest rather in the oligopolistic fashion of price setters, for example, with a mark-up, reducing the price stabilizers in the domestic market after an external shock.
7. See "Enterprises and the Labor Market", Kostzer 2007. Kostzer, D. (2007). "Labor markets, economic development, and job quality Ingrid Rima's contributions to labor economics" in Mathew Forstater, Gary Mongiovi and Steven Pressman.
8. Overall, the Minimum Adjustable Living Wage, the regulation governing working hours, paid vacation, and social protection contribute in setting the institutional wage. In spite of the high level of labor informality or lack of social protection, these institutions, particularly the Minimum Adjustable Living Wage, convey an important signal to the markets (Marinakis and Velasco 2006).
9. *Fordism* in the sense that workers themselves acquired the goods they produced rather than *Fordism* as the standardization of the production process.

10. Even though they are perceived as simple models, Bhaduri and Harris (1987) explained the difficulties in achieving stability even in extremely simplified models.
11. On the economic and institutional evolution of the labor market in Argentina during the Convertibility regime, the reader can refer to Maurizio (2002).
12. On the role of the differentiated exchange-rate structure in the growth process in Argentina during the Post-Convertibility, see Agis and Feldman (2009).
13. For an analysis on the role of minimum wage policies applicable to the Argentine case, see Kostzer (2006) and Maurizio (op.cit.).
14. Besides this effect, the exchange rate appreciation can impact on the payment of dividends. In this type of context, companies can rush to pay out dividends to employ these resources for speculative activities, in the real state sector. The process of paying out dividends and financial speculation at the cost of productive investments undermines income distribution, both from the functional as well as personal perspective. While the analysis of this type of effects is not within the scope of this work, the relation between exchange rate appreciation, payment of dividends, and financial speculation have been extensively studied.
15. In this sense, the implementation of the Universal Child Allowance for Social Protection falls within this group of policies that could contribute to mitigating the dynamic described before. In fact, the robust recovery of the Argentine economy from the contractionary effects of the global crisis, which started in the fourth quarter of 2010, has much to do with the boost in demand derived from this policy. On a detailed analysis of the impact of the Universal Child Allowance on the local economy, see Agis et al. (2010).
16. Galasso and Ravallion (2003), Kostzer (2008), Tcherneva (various years), and so on.
17. At this point, the exchange-rate regime is again crucial, since it will protect or not the production of DPS, which, as long they have excess capacity, will increase production, while increasing wages, wage bill, and even profits due to the lower fixed costs per unit of production.
18. The second brands are also produced by the IPS firms that found in the market segmentation a way of differentiating products and increasing profits, at the same time they adjust rapidly to changes in demand. Only at the extreme, the "inferior" goods are provided by IPT firms, reducing the capacity of adjustment of the economy.
19. Lerner, Abba (1943) "Functional Finance".
20. This can be considered a typical "Keynesian unemployment" in contrast with the "Marxian unemployment", the latter being the one when the process of capital accumulation was not enough to have a certain level of

idle fixed capital, while the first is precisely when there is a lack of demand in order to use the excess capacity.

21. For a deep analysis, see Praasch (2003) "How is labor distinct from broccoli".
22. It has been proven that "on-the-job" training is the most effective and efficient way of increasing skills of the workers, independent of their previous experience or certification. The EGP is a great entry point for other types of interventions, such as gender equity, preventive health, skills development, and so on, allowing an interesting database of the households of the beneficiaries that ease other interventions from the social sphere.
23. For the advantages of the minimum wage as a tool for income distribution and economic recovery, see Marinakis and Velasco (2006).

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CHAPTER 11

The Job Guarantee: An Institutional Adjustment Toward an Inclusive Provisioning Process

Brandon McCoy

This inquiry seeks to establish that a job guarantee (JG) would animate the non-invidious re-creation of community, challenge the hierarchy which permeates social and economic relations, and facilitate an institutional adjustment toward a more inclusive provisioning process. In so doing, the analysis commences by revealing how the current institutional structure fails to provide a non-invidious provision of the material means of life. The first section demonstrates that the institution of ownership and the price system serve as the animating forces which create the inegalitarian power structure effecting unemployment, an inequitable distribution, and hierarchy. After describing the social problem and institutional structure, the analysis considers and extends Hyman Minsky's proposal for a public employment program. The second section focuses on the institutional implications encouraged by the implementation of a JG, emphasizing the interrelated nature of employment and community, and their role in facilitating institutional adjustment. In drawing on the theory of institutional adjustment, it becomes lucid that community remains

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integral to the adjustment process, providing space for organizing across historical divisions while encouraging an increased recognition of the interdependence necessary for change. The analysis draws to a close by considering how a JG challenges the dominant and problematic institutions. The ultimate objective of the final section remains illuminating the role of a JG in facilitating a transition toward an inclusive provisioning process: the creation of an institutional structure that reduces hierarchy and domination and promotes equality, diversity, and autonomy, enabling all members of the community to participate in the social provisioning process.

11.1 Social Problems and the Institutional Structure

This analysis begins with a powerful statement made by John Maynard Keynes [1936] (1964, p. 372): it remains the inability to provide full employment and an equitable distribution of wealth that persists as the greatest problems plaguing our capitalist system. Adding to Keynes's insight, Julie Mathaei and Teresa Amott (1997) assert that the current institutional structure and core economic processes reinforce an economic hierarchy which motivates domination and exploitation of one group over others, extending to nationality, race, gender, and class. Mathaei (1992) suggests that this hierarchy transpires on multiple levels, assumes many forms, and operates through numerous processes. Under the current institutional structure, money has emerged as a primary mechanism which renders power over things, other humans, and nature. Money has become the ultimate symbol of invidious distinction, functioning in accordance with a value system which equates worth with personal attributes and achievements.

The hierarchal power structure pervading society generates an invidious restriction of the material means of life, afflicting large segments of the community. Data from the American Community Survey for the year 2013 confirms that women and historically disadvantaged minorities suffer disproportionately.[1] The reported median income in 2013 for minorities ranges from approximately 0.63–0.74 of Whites, while females' median income was approximately 0.74 of males. And, unemployment for Black or African-American males over the age of 16 remains double that of their White counterpart. The hierarchal power structure does not restrict its animus to only women and minorities; according to Pavlina

Tcherneva (2015, p. 2), over the period of 2009–2012, the top one percent received 95 percent of all economic growth, while the top one-tenth of one percent seized 32 percent.

The problems of unemployment, an inequitable distribution, and hierarchy remain best understood in terms of social relations permeated by an inegalitarian power structure. Recognizing this structure leads to an acknowledgement that those who suffer from these problems live in subservience. If society choses to reject this domination, it must consider how to move toward a greater degree of autonomy: what will serve as the catalyst, initiating the non-invidious re-creation of community. According to Murray Bookchin (1971, p. 46), this process must facilitate assembly and community; moreover, it must seek the dissolution of power and hierarchy.

This inquiry now seeks to distinguish the driving forces generating the power structure and hierarchy that plagues society. In so doing, two key institutions require consideration: Thorstein Veblen's "price system" and private ownership. The price system represents the hegemonic power exercised by business over society: the structure and processes which reinforce hierarchy through the creation of inegalitarian social and economic relations. Whereas the institution of ownership forms the foundation for the ethical consent which justifies the price system's stranglehold over society and the associated employment and distributional ills.

It was during the rise of the machine era, according to Veblen (1904, p. 66), that the institution of ownership experienced a great change. This change of circumstance permitted the institution of ownership to extend to the public stock of knowledge, most importantly, technology embodied in capital goods. Veblen (1904, p. 77; 1923, pp. 66–67) states that this extension, considered a natural right, vests the owner unqualified power of discretionary idleness: the ability to restrict the community's access to the material means of life. It remains this "conscientious withdrawal" that, Veblen (1921, pp. 1–7) asserts, ensures business receives a satisfactory income in money terms for the employment of its property in the capitalist production process.

The concentration of ownership, a marked characteristic of modern society, affords business exclusive control over the production process. Veblen (1904, pp. 1–3) notes that through this control, the businessman acts as "the only large self-directing economic factor" and hence "controls the exigencies of life under which the community lives". The businessman's enslavement to pecuniary animus spawns his disregard for community

while openly pursuing predatory coercion. And it remains the hegemonic position of the price system that facilitates these acts of coercion. Relying upon the Veblenian processes of contamination, emulation, subordination, and mystification, William Dugger (1989) perspicaciously sketches the concomitant process of the emerging corporate hegemony and the hollowing of non-corporate institutions. This control, however, represents a profound dichotomy as there exists a dissociation between the interests of business, narrowly focused on pecuniary gain, and community. Business's command over industry, with its singular focus on pecuniary gain, expedited the organization of society on the price system.

Coinciding with the rise of the machine and the previously mentioned extension of ownership to the public stock of knowledge, the putative earning capacity, derived from ownership, emerged as the ultimate goal of the price system. Veblen (1921, pp. 4–9, 17) states that realizing the maintenance of reasonable prices relies upon a habitual restriction of the community's access to the material means of life. Given that business commands industry, it follows that business principles dictate the rate and volume of output without concern for the community. In Veblen's words, "price is the essence of the case, livelihood is not." Not only does the price system determine access to the material means of life, but, according to Max Lerner (Veblen and Lerner 1948, p. 26), the price system also dictates social values and furnishes the "cash nexus", facilitating the association of personal attributes and worth with the ultimate symbol and value of a pecuniary social system.

As the machine process proliferated, there emerged an increasingly important role for business relations to maintain the functioning of the interrelated subsystems that constitute the economic process. This new agency for the owners of the sub-processes allows them to induce a differential advantage, achieved with an alteration of values, through manipulation of relations and transactions. Of particular interest remains the continuation, albeit in a transformed manner, of inegalitarian power relations based on gender, race, nationality, and social standing. According to Matthaei (1999, p. 598), a new form of hierarchy has emerged which no longer remains characterized by rigid divisions, particularly along gender lines. However, traditionally masculine activities, although now more freely accepting of women (especially those with class and/or race privilege), continue to receive higher valuation than traditionally feminine activities. At the core of these processes remains a struggle to dominate others in the economic hierarchy.

When the institutional structure, according to Paul Bush (1987, p. 158), fails to provide a non-invidious provision of the material means of life to the community, social problems arise. And solutions to social problems rely on progressive institutional change, change which contributes to the continuity of life. Marc Tool (1979, p. 293) adds that progressive institutional change facilitates the non-invidious re-creation of community. Thus, progressive institutional change does not accept the equating of worth with personal attributes and achievements: progressive institutional change rejects hierarchy and promotes inclusion throughout the community.

11.2 Employment and Community

According to J. Fagg Foster [1948] (1981, p. 930), addressing social problems, like those described in the first section, necessarily involves an institutional adjustment. Foster's theory of institutional change operates within an institutionally defined space, requires deliberate choice by members of the community, and must not displace non-problematic institutions. In what follows, the analysis seeks to establish that a JG would not only address unemployment and distributional problems, but would serve to restore community. Community exists as the institutional space that will promote a recognized interdependence and create social relations capable of subverting the price system's hierarchal structure, facilitating a transition toward a more inclusive provisioning process.

Minsky (1965, 1973, [1986] 2008) emphasized the need for a JG to effectively combat poverty, sustain effective demand and to constrain economic instability. Minsky's proposal contains four key features: exogenously determined compensation, no means test for employment, permanent status with voluntary participation, and federally funded while locally implemented (i.e. a decentralized administration). David Brady (2003, p. 392) and Isabel Sawhill (1988, pp. 1110–1112) both find evidence that unemployment serves as a primary cause of poverty. William Mitchell and Joan Muysken (2008) come to the palpable conclusion that the best approach to alleviating unemployment involves increasing employment rather than addressing supply-side issues. By simply offering a job to anyone willing and able to work, the greatest structural challenge—a shortage of jobs—in confronting poverty would cease to exist. And, according to Minsky (1965), targeted spending through direct job creation facilitates the greatest primary and secondary effects in combating poverty.

The current approach to generating employment relies upon inducing investment through the special treatment of capital income. Not only, Minsky (1973) notes, does this special treatment amplify instability, but according to a Congressional Research Service report by Thomas Hungerford (2011), the rising share of capital income served as the greatest contributor to the increasing inequality over the first decade of the twenty-first century. Utilizing direct job creation would allow policy makers to abandon the special treatment that capital income currently receives. The public employment strategy would increase stability while simultaneously reducing a key component stimulating inequality.

Extending Minsky's analysis provides additional insight into the role of a JG in animating a transition toward a more inclusive provisioning process. Drawing on the ideas of inclusive democracy as developed by Takis Fotopoulos (1997), participatory economics as presented by Robin Hahnel (2012) and Michael Albert (2003) and the feminist economic ideas of Matthaei (1999) lead to a vision of society that rejects hierarchy and aims at the elimination of domination through the creation of an institutional structure that promotes equality, diversity, autonomy and strives to include all members of the community in the social provisioning process.

The potential impact to the community of a JG extends beyond the provision of employment; in fact, Minsky's proposal allows for great secondary impacts to propagate throughout the community. A JG affords opportunities which coincide directly with key community building concepts as put forward by Gar Alperovitz, David Imbroscio, and Thad Willamson in their 2002 book *Making Place for Community*. By taking workers where they are and as they are, a JG ensures a strong economic presence in underdeveloped communities plagued by unemployment. This presence acts as a form of anchoring; according to Alperovitz et al. (2002, p. 68), anchored communities tend to display greater stability. Long term stability in JG-anchored communities derives from a decreased reliance on private investment to drive economic development. While in the short term, stability arises from the support provided to local businesses, encouraging the development of local linkages. The decentralized administration of a JG would further stimulate local linkages, as a community-based decision-making process should enhance support of local firms and cooperatives. It follows that a JG would greatly diminish the community's dependence on the exigencies of the market in pursuit of the material means of life.

In accordance with Veblen, John Curl (2012, pp. 2–3, 246, 354) states that, coinciding with the rise of the machine, there began a transformation that forced the "free" population into *wage slavery*. Utilizing a JG to support development of cooperatives (co-ops) would contribute to a reversal of that transformation, aiding restoration of community and reducing hierarchy. According to Curl, cooperatives offer an alternative to *wage slavery* through facilitating a re-organization of life on a different basis, subverting the typical hierarchal structure and precarious employment generated under the price system. Moreover, a JG can empower co-ops to provide public works and services that benefit the locality. The organizational structure of co-ops promotes a bottom-up inclusive process in both work and community, directly contradicting the top-down structure of the price system which marginalizes those who do not fit. Indubitably, this bottom-up process remains better suited to provide for the needs of people.

The impact of community economic stability contains grand implications. Alperovitz et al. (2002, pp. 2–7) note that a robust economic foundation enhances the communities' social capital, bolsters cultural worth, and affords social validation. Additionally, an economically vigorous community will foster inclusiveness of diverse political interests, especially at the local level, animating a tendency toward a great social leveling. Developing stable geographic communities would provide space for organizing across historical divisions. Moreover this space, in accordance with Foster's (1981, p. 933) principles of institutional adjustment, would increase a recognition of the interdependence of community members, facilitating a transition away from the price system.

Returning to Dugger's analysis, it illuminates how a JG would not only end unemployment but also serve to restore the hollowing institution of community: a JG would provide substance by engaging individuals in activities which surpass the mere pursuit of pecuniary gain. A JG would not only serve to restore community but simultaneously facilitate resistance to hegemony. Restoring community would strengthen and protect its independent functioning, a key component of promoting a pluralist culture. According to Dugger (1989, pp. 1–5), a pluralist culture consists of a multitude of independent institutions, serving to promote a synthesis of values and beliefs. The diversity involved in a pluralist culture creates individual will and strengthens character. Pluralism animates the process of freedom—the freedom from conformity and the freedom to stimulate individual maturity. Hence, a JG affords great potential in restoring the institution of community, encouraging resistance to corporate hegemony.

In a 2010 article, Jon Wisman (p. 46) suggests that the hollowing out of the institution of community leads to increased withdrawal from social activities. Further reinforcing this argument, Amartya Sen (1997, p. 161) adopts a broad view of poverty, facilitating an understanding of the nature of deprivation resulting from unemployment. Sen states that unemployment predisposes people to social exclusion. This marginalization encompasses economic activities as well as participation in community life and political processes. Considering the extent of the deprivation initiated by unemployment, it becomes lucid that the restorative ability of a JG to the community extends beyond the mere provision of employment.

Drawing on the ideas of Bookchin (1993, pp. 48–50) and his portrayal of community under Confederalism illustrates the importance of community in challenging the existing power structure. For Bookchin, communities compromise a local, interdependent public space which facilitates active participation in social processes. Active participation encourages an inclusive, bottom-up power structure that, according to James Scott (2012, p. xii, 19), promotes cooperation without hierarchy. This structure involves "informal, self-organized, and transient networks of neighborhood, work, and family that lie outside the formal institutions of politics".

Experiences from previous public employment programs serves to illustrate the actual impact beyond the provision of employment to the community. The New Deal Programs influenced community life through the arts and provision of a host of public goods and necessities. The numerous alphabet programs of the New Deal served to engage community and individuals outside the realm of the price system. An example provided by Curl (2012, pp. 315–322) describes the formation of new co-ops and assistance to existing co-ops. Moreover, Curl depicts how New Deal programs actually went beyond influencing community, directly creating 99 new communities, housing approximately 50,000 residents with the New Deal homestead colony program. While, according to Tcherneva and L. Randall Wray (2007), the *Jefes* program in Argentina included projects specifically designed to address community needs, including construction of new or renovation of existing community centers and provision of imperative services like food kitchens, family attention centers, and health promotion programs. Furthermore, reliance on a decentralized administration facilitated the *Jefes* program to address the most pressing needs of communities.

Beyond providing needed services to communities, *Jefes* greatly enhanced civic participation, drawing people from a broad range of social strata into political processes. Although these programs were historically specific, it remains clear that there exists huge potential for a JG to contribute to the restoration of the community, enhancing community life and social cohesion.

Tcherneva and Wray (2007, pp. 24–25) note another very interesting result from the *Jefes* experience: the contribution toward redefining the meaning of work. A principal accomplishment in challenging the price system and the associated patriarchal processes emerged with the vitiation of the preconception that traditionally unpaid activities (typically associated with feminine roles) are unproductive. This bias clearly stems from the subordination of society to the primacy of the price system, the contamination by pecuniary values, and the continued existence of patriarchal institutions. The provision of paid employment for "unproductive work" not only challenges historic patriarchal tendencies and the primacy of the price system, but serves to strengthen community. According to John Budd (2011, Chaps. 7 and 8), the prevailing conceptualization of work derives from social institutions and the associated power nexus. Thus, redefining work in and of itself serves as a challenge to dominant institutions. However, when considering that this work often entails community oriented goals and/or traditionally feminine activities, it becomes cogent that extending the conceptualization of work into this sphere provides additional substance, meaning, and value—key sources of institutional resistance—to community, inciting a challenge to the hegemony and hierarchy which marks the current institutional structure.

Mathew Forstater (2013, Chap. 6) describes how Municipal Confederalism can serve as a framework for a JG. In so doing, Forstater posits the importance of work for human development, claiming it exists as an integral component of human experience. Indubitably, unemployment denies this opportunity, whereas Albert (2003, p. 104) notes that the hierarchal organization under the price system disparately empowers a select few, further reinforcing hierarchy through class, gender, and racial divisions. Both Forstater and Albert contend that the organization of work can serve to balance this integral component of human experience. A JG, through its capacity to operate outside the realm of the price system, can organize work so that it empowers all, regardless of any demarcation, equally.

11.3 Ownership and the Price System

Dugger (1989, pp. 53–54) states that the hegemonic culture encourages whatever means necessary to achieve a given end, emphasizing ends over means. Within the current institutional structure, a shortsighted, narrow view of profit maximization dominates. Not only does this approach serve to hollow out the non-corporate institutions (family, school, union, church, community, state, and mass media) but, according to Forstater (1999, pp. 7–8), requires maintaining flexibility—an ability to adapt to changing circumstances. The permanence of unemployed resources, including most notably labor power, enables maintenance of the desired flexibility. Forstater states that system flexibility facilitates an expansion of capital accumulation by attenuating structural rigidities. Indubitably, this flexibility benefits the businessman and corporation at the expense of the community.

In accordance with Veblen (1904, pp. 286–287) and Dugger (1989, p. 8), who both observed that the state serves as an instrument of domination, Forstater (1999, p. 8) asserts that flexibility, maintained through politically forced unemployment, occasions unnecessary and unacceptable economic and social costs to the community. The narrow criteria dictating economic decisions in the private sector does not harmonize with the broader well-being of the community. And only the government, through its ability to divorce the employment decision from the profit constraint, possesses the unique capacity to place means in their proper relationship to ends in the social-economic processes of a capitalist system. A monetarily sovereign government possesses the means; what the state lacks, however, remains the will.

In Veblen's analysis, the state acts chiefly to represent the interests of business, and according to Dowd (1966, pp. 132–134), state power remains the expression of those dominant interests. Furthermore, Veblen (1904, pp. 286–287) notes that this subservience to business interests remains unchallenged as the community naïvely believes that their material welfare coincides with the pecuniary pursuits of business. And, according to Colin Ward (1973, p. 12), it remains this subscription to business values by the community that allows the unchallenged domination of business over society. The subreption of business values, Dowd (1966, pp. 105, 134) states, has gone so far as to become accepted unthinkingly. Yet, social wellbeing does not necessarily parallel business propositions. Dowd expands upon this discord by considering the propensity for emulation,

stating that a virtual enshrinement of businessmen substantiates the fashioning of politics in their image. This fashioning undoubtedly contributed to the price system emerging as a dominant influence in the socio-economic process. In the concluding pages of *Absentee Ownership*, Veblen (1923, pp. 442–445) reaffirms the primacy of the price system and its subreption of the state, asserting that the state remains a predatory fraternity with a reverence for applying business principles to socio-economic problems. And, in Veblen's (1904, p. 379) own words, "[t]he question, therefore, remains, on the whole, a question of what businessmen may be expected to do for cultural growth on the motive of profits."

Regardless of the dominance assumed by the price system, according to Lerner (Veblen and Lerner 1948, p. 27), Veblen's theory of power stresses that it remains the community which exhibits the disposition for slaughter. It follows that there exists a recognized interdependence in the institutional adjustment brought about by implementing a JG. This interdependence, according to Foster (1981, p. 933), implies that a deliberate choice must be made by those who are to break with previous behaviors. This break will first require a recognition on the part of the community that the inalienable rights of pecuniary obligation and ownership as defined during the eighteenth century, no longer, as Veblen [1919] (2002, p. 112) observed, safeguard the "rule of Live and Let Live". And secondly, the ensuing institutional adjustment, according to Marc R. Tool (2000, p. 202), must be readily adapted into the existing institutional structure, only displacing the non-instrumental functions of problematic structures. A JG would not completely displace the price system nor the market where it conducts its business. Rather, implementing a JG functions in accordance with Foster's principle of minimal dislocation; as Minsky (2008, p. 112) noted, the market mechanism suffices in making unimportant social decisions (i.e. decisions like those regarding ice cream flavors). However, Minsky asserts that the market consistently yields undesirable results on important issues, most notably, maintaining economic stability, capital development, and education and training.

A JG serves as an initial step toward the realization of an inclusive provisioning process. According to Veblen (2002, pp. 111–114), this realization requires displacing the vested interests legitimate right in "getting something for nothing". While a JG does not completely dispose of this feature, it does present a formidable challenge to the interpretation of the principal "inalienable right", which motivates it: ownership. Ownership, specifically of the means of production and the technology embodied

within it, confers the right to the vested interests to control economic activity: to restrict the community's access to the material means of life.

Through decentralized administration, a JG places a portion of the means of production under demotic control of the community, initiating a re-appropriation of the material means of life. This re-appropriation of the means of production, however, does not result in a redistribution of ownership as understood under the price system. Rather, the re-appropriation affords the community the power to determine user rights. Drawing from the work of Hahnel (2012, pp. 21–32, 46) enables this analysis to consider how communal "ownership" of the means of production promotes an egalitarian outcome. First, communal ownership maximizes the benefit afforded to the community via the power to decide which tasks are undertaken: it transfers power to community, facilitating the community to meet its most pressing needs uninhibited by pecuniary motives. Second, a JG would address a grave flaw in the contribution-based maxim underlying the current distributional structure—the punishment of those whom remain unable to find employment (i.e. unable to contribute) due to a lack of jobs. The redistribution of ownership and improved distributional structure serve to increase economic justice—moving toward a distribution of economic benefit more closely paralleling the degree of effort and personal sacrifice expended.

It has been established that a JG challenges the price system by engaging people outside of its realm. According to Hahnel (2012, pp. 13–15), there exist four fundamental activities within any organization of the provisioning process; thus, any transition away from the current organization toward a more inclusive process must address these four key components. The inquiry now seeks to establish how a JG addresses these components, while also promoting key elements of citizenship, which, according to Fotopoulos (1997, pp. 216–217), remain integral in achieving an inclusive provisioning process.

The first two aspects, both restricted by the profit constraint and dictated by the price system, concerns decisions regarding the organization of work and production. Furthermore, Joan Acker (2006, p. 441) states that a great deal of the economic and social inequality originates with the organizing and daily activities of work. In contrast, decisions defining the organization of work and production inside the JG transpire independent of the profit constraint and outside the realm of the price system. Thus, organization under a JG can place means in the proper relations to ends, con-

sidering the impact to community while specifically designing jobs and projects to reduce hierarchy. Distribution, traditionally based on the contribution maxim, would no longer exclude the unemployed as a JG ensures anyone who is willing and able to work has the opportunity to do so. Moreover, a JG presents a serious challenge to the institution of ownership which serves to substantiate this maxim. The exogenously determined compensation can ensure satisfaction of basic needs, a critical component of social citizenship. The gradual shift of control over the means of production would benefit the community; specifically, it would afford the community greater autonomy over the material means of life. This structure of demotic ownership serves as an integral component of economic citizenship uninhibited by inegalitarian power relations. Finally, with concern to the allocation of resources—the distribution of burden and benefits—a JG would increase participation across a broad spectrum of society in the allocation decision through its decentralized administration. This increased participation would grant the community greater influence over allocation and represents the final element of Fotopoulos's (1997) economic citizenship.

It follows that a JG addresses the four key activities while engaging individuals outside the realm of the price system and promoting active citizenship, thus facilitating an increased space for autonomy and expression while reducing marginalization. According to Hahnel (2012, pp. 90–91), this increased autonomy would animate a transition toward a more participatory process. However, the need for a broader view of the ultimate goals of the transition process and contributions from a JG requires further explication. Under the current institutional structure, hierarchy (including class, racial, and gender demarcations) stems principally from the institution of ownership. In accordance with Hahnel (2012, pp. 13–19), an ultimate goal of a JG-driven transition toward an inclusive provisioning process remains the creation of a non-hierarchal community. However, Ward (1973, p. 24) notes that the concentration of power, stemming from the hegemony of the price system and the institution of ownership, serves as the primary obstacle to progressive social change. In challenging the price system, a JG directly contests the foundation of hierarchy and the ultimate obstacle to progressive social change—the institution of ownership. Furthermore, a JG affords greater economic democracy: a JG extends decision making power to those affected to a greater degree. An emphasis on communization of the economic process and development of local linkages will indubitably paral-

lel a rise in solidarity—concern for the well-being of others. And ultimately, a JG would facilitate greater economic justice as economic reward would no longer exclude the members of the population for which no jobs exist.

11.4 Conclusion

This inquiry has sought to establish that a JG would animate a non-invidious re-creation of community, challenge the hierarchy which penetrates society on many levels, and facilitate an institutional adjustment toward a more inclusive provisioning process. In so doing, the analysis depicted how the current institutional structure fails to provide a non-invidious provision of the material means of life. The first section established that the institution of ownership and the price system serve as the driving forces behind the inegalitarian power structure that propagates unemployment, an inequitable distribution, and hierarchy. After describing the social problem and institutional structure, the analysis considered and extended Hyman Minsky's proposal for a public employment program. The second section focused on the institutional implications brought about by the implementation of a JG, emphasizing the restoration of community and its role in subverting the dominant and problematic institutions. In drawing on Foster's theory of institutional adjustment, it became lucid that community and work exist as integral elements in the adjustment process, providing space for alternative social relations and encouraging a recognized interdependence. The analysis drew to a close by considering challenges presented by a JG to the institution of ownership and the price system. The final section illuminated the role of a JG in transition toward an inclusive provisioning process: the creation of an institutional structure that reduces hierarchy and domination and promotes equality, diversity, and autonomy, providing opportunity for all members of the community to participate in the social provisioning process.

Notes

1. Median income for historically disadvantaged minorities was calculated using data for Black/African American, Latino/Hispanic, and Native American populations.

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