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To Redistribute or Not: Land Reform and Economic Well-Being in SADC Countries*

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Abstract

The paper examines the effect of land reform on the standards of living of SADC countries. The agricultural share of GDP is used as a proxy for economic growth. Empirical results provide evidence that land reform did benefit SADC countries during the period 1980 to 2007. Specifically, results show that the agricultural share of GDP in countries that adopted was higher than that of countries that did not adopt the same approach. Results also show that the agricultural share of GDP in countries that expropriated land without compensation and with partial compensation experienced was higher when compared to countries that did not adopt the same approach. Countries that expropriated land with full compensation experienced lower growth as compared to those that did not use this approach. Based on the results, countries that used the willing seller willing buyer approach had higher agricultural returns when compared to those that adopted any of the three expropriation land reform approaches.

Key words: Civil unrest, expropriation, land reform, Southern Africa, willing seller-willing buyer

JEL: F54, H13, O55, Q15

I. Introduction

Landlessness and disparity in the size of land holdings among those who own land plays a central role in determining the upward economic mobility of many households in all nations, especially in developing countries. Several reasons abound. First, disparity in the distribution of land holdings may pose significant effect on the overall economic growth and development of a country. Ericsson and Vollarth (2004) for example, indicate that the distribution of land alters the incentives – educational, institutional, or financial, which in turn affects the economic growth and development of a country. Tadesse (2006) argues that inequality in land holding distribution constrains the ability of and the pace at which policy makers in developing countries might be able to address inequality in income distribution. Mariscal and Sololoff (2000) who find land holding inequality as a significant variable in explaining differences in the public provision of education across the New World, conclude that greater land inequality creates frictions in the willingness of political elites to take a collective action on education funding.

Second, for many agricultural households, land is the single most significant asset and biggest investment. It maintains its capital value over a long period of time; thus provides security to its current and potential owners. Hence, landlessness and disparity in the size of land holding distribution, where ownership exists can create and/or sustain inequality in income levels among current as well as future generations. It can also constrain individual's access to credit markets that permits the purchase of modern farming and productivity enhancing inputs such as farm machineries, fertilizers and pesticides, and access to the often freely available government services such as agricultural extension; hence lifetime career choices of the agricultural community. Galor, Moav and Vollarth (2008) for example, show that inequality in the distribution of land ownership adversely affects the emergence of human capital promoting

institutions (e.g., public schooling), and the pace and the nature at which a country transitions from an agricultural based economy to a vibrant industrial economy.

Finally, the fact that most of the world's poor rely on agriculture and the livelihood of the majority of population in developing countries depends on agriculture as their major source of income and employment, makes the lack of ownership of land and inequality in the distribution of land holdings a critical factor in the fight against poverty and unemployment. For instance, Griffin, et al. (2001) argue that by perpetuating allocative inefficiency in the use of resources and lowering average level of income, concentration of land in the hands of a few produces widespread rural poverty. Supporting this notion, Deininger (1999) and Odendaal (2005) indicate that land reform in agrarian economies has a great potential to increase agricultural productivity and enhance the ability of developing countries to fight poverty. Place (2009) argues that beneficiaries of land reform programs can use their land titles as a collateral to gain access to credits for complementary agricultural investments. Based on micro-level empirical observations of land allocation and its relation with poverty within the smallholder sectors of countries in Eastern and Southern Africa, Jayne et. al (2003) conclude that meaningful discussions of rural poverty alleviation must be grounded within the context of the prevailing farm size distribution patterns.

Given these constraints that landlessness in general and disparity in landholding size distribution where ownership exists impose on the society and the opportunities that addressing the problem avails for furthering their economic progress, it is therefore not surprising to observe a heightened interest among policy makers particularly in African countries that have particularly experienced colonial rules in the past constantly engage in the search for various ways of increasing access to land/ownership, and/or reducing inequality in the landholding distribution

among their population. While the strategies employed in the implementation of the land reform programs that were intended to address the problem may vary, the two most commonly used paths to land reform are expropriation and the market based approaches. Focusing on the experience of countries in the Southern African Development Community (SADC) where inequality in the landholding distribution that existed during the colonial era continued into the post-independence periods, the primary goal of this paper is to empirically investigate the effect land reform approaches on the standard of living of the population in the countries considered.

We focus on SADC countries for the following two reasons: First, upon attaining independence within the last 50 years, almost all the countries still have unresolved land inequality problems and their corollary of widespread rural poverty and frequent social unrests. Second, SADC countries made land reform one of their top priorities in an effort to address the existing land inequality problems within the last three decades. A better understanding of our research problem warrants a brief discussion of the SADC and some historical underpinning of inequality in landholding distribution across countries in the community together with the efforts undertaken to address inequality in the landholding distribution.

II. A Brief Profile of SADC Countries

The SADC is an intergovernmental organization which consists of 15 southern African countries: Angola (1975), Botswana(1966), Democratic Republic of the Congo(1960), Lesotho (1966), Madagascar(1960), Malawi(1964), Mauritius(1968), Mozambique (1975), Namibia (1990), Seychelles (1976), South Africa(1994), Swaziland(1963), Tanzania(1961), Zambia(1964), and Zimbabwe(1980), with the figures in parenthesis indicating the years during

which the SADC countries gained their independence from their respective colonial rulers (Portugal, Belgium, France, Germany, and the United Kingdom).

<Insert Table 1 approximately here>

Formerly known as the Southern African Development Co-ordination Conference (SADCC), SADC was formed in Lusaka, Zambia on April 1, 1980, following the adoption of the Lusaka Declaration. The Declaration and Treaty establishing the SADC which has replaced the Co-ordination Conference was signed at the Summit of Heads of State or Government on August 17, 1992, in Windhoek, Namibia. The overall goal of SADC is to promote and reinforce the socio-economic, political and security cooperation and integration of the member countries. The primary goal of SADC is to enhance the economic growth and development (including poverty alleviation, enhanced standard and quality of life of the people in the region, and support for the socially disadvantaged) through regional integration of the member countries in the region. Most of the SADC countries attained their independence within the last 50 years. Tanzania is the first SADC country to achieve its independence from the British colonial rule. In contrast, South Africa, Namibia and Zimbabwe are the few SADC countries that endured prolonged colonial rule.

One defining common characteristic of the countries in our study is that they were all colonies. While the extent and the instruments that perpetuate it might differ, the fact that all SADC countries were colonies in the past suggests that the colonial administration and the institutional infrastructure left by the system has played an important role in defining landlessness and disparity in the landholding distribution that exists today in these countries. Nonetheless, there exists a stark difference in the approaches followed by the SADC member

country governments in addressing the problem of landlessness and disparity in landholding distribution. These vary from Angola, a colony of Portugal until 1975, where the rights and land holding of the local people have been severely limited during the colonial period and continued to be constrained by the devastating civil war that followed independence and lasted until 2002, to Botswana, where despite being a British colony until 1966, there existed a well thought out structure and functional land administration that has been in place for a long time. Knox (1998) who reviewed the land tenure in Botswana, for instance, concludes that the decentralized structure of land tenure system and the very responsive nature of the government have made the country one of the most successful places where a structure of land tenure policy compatible with development objectives has been laid.

The geographic sizes of the SADC countries also vary from that of the Democratic republic of Congo, the third largest country in Africa, to Lesotho, a small mountainous country, and Madagascar, the fourth largest island in the world. A former colony of Belgium, the Democratic republic of Congo (DRC) embarked on removing restrictions on African land ownership right after its independence in 1960. Consequently, while many of its citizens were able to acquire land, to date the land in the country belongs largely to the state, and most of the agricultural land is operated under a communal tenure. On the contrary, a small mountainous country with less than 2 million people in which just 13 percent of the land is arable, Lesotho, has a customary land tenure system that is characterized by uncertain long term tenure rights (that discourage investment, prohibit sales, and thereby limiting the abilities of progressive farmers to effectively utilize the land they own). A former French colony that attained its independence in 1960, Madagascar has a land area of approximately 592,800 square kilometers and population of about 20.1 million, and is surrounded by the Indian Ocean. With 75 percent of

its population living in the rural areas, the country has experienced one of the highest population growth rates in the world, and has a complex mixture of state freehold tenure, and community based tenure systems.

The SADC region also includes countries such as Malawi, Namibia, Swaziland, South Africa and Tanzania. Of these, Malawi is distinguished for its dual land agricultural sector where large estates cultivating land averaging 843,000 hectares in size and smallholder farms whose sizes have fallen to an average of 1.1 hectares operate side by side, with the agriculture sector playing a dominant role in the economy, accounting for over a third of GDP. According to Knox (1998), despite the government's efforts to improve the welfare of smallholders, Malawi's land policy has constantly precluded the development of smallholder as measures that were in place reduced tenure security among the small holders while favoring the estate sector. When it obtained its independence in 1990, Namibia had 45% of its total land area and 74% of potentially arable land under the control of just 2% of the population that consisted of white commercial farmers, indicating the severity of the extent to which Namibian natives were dispossessed of their land through colonial legislation that prevailed from 1884 to 1990. Both Swaziland and South Africa were under the British rule. While the traditional heritage system in Swaziland prohibited buying or selling the land, the apartheid laws that prevailed in South Africa until 1994, together with the Glen Grey Act of 1894 and the Native Lands Act of 1912 have limited black South Africans' access to farming, land for cultivation, and jobs.

Similarly, a product of British colonization that began in the 1890s, that made the land holdings increasingly skewed in favor of whites through acts like the Land Apportionment Act of 1930, in Zimbabwe, the situation further worsened in 1965 when white Rhodesians unilaterally declared independence from Britain and seized control of the majority of fertile land within the

country and forced blacks to use the poorer, arid, and unproductive ground. Contrary to the South African experience, however, Zimbabwe initially pursued a partially British funded willing seller-willing-buyer land reform program as part of the 1979 Lancaster Agreement. However, an unsuccessful bid to renew the British funded land reform program resulted in the 1992 Land Acquisition Act, which removed the willing buyer willing seller clause, limiting the size of farms as well as introducing a land tax. It also gave the government the power to compulsorily buy land and provide a fair compensation for the acquired land. Table-1 provides a summary of the type of land reform programs implemented in the SADC countries.

Despite the variation in the extent of landlessness and inequality that prevailed during and after the colonial periods across the SADC countries, as stated in the primary objective of SADC, all the countries have a common purpose of achieving enhanced standard of living of their populations. Given the human development impact of access to land (ownership, security of rights, and the size of holdings), addressing the problem of landlessness and that of inequality in size of the holdings remains a primary subject of interest. With the exception of Mauritius and Seychelles, each of the SADC countries have thus attempted to implement land reform programs that include measures ranging from declarations and/or acts eliminating the discriminatory land and agricultural policies of the colonial periods, confiscating land and making it the property of the state, re-distributing privately owned and/or public land to tenants, and market based measures that permit land transactions between willing buyers and willing sellers.

III. The Literature.

There are two main views of the importance of land reform programs in African countries. The first view stresses that land reform speeds movement towards egalitarian land

holding distribution; however, it is often carried out at the expense of increased agricultural productivity. The second view asserts the need for giving higher priority to achieving higher agricultural production even if it might be at the expense of potential reduction in inequality that may be achieved through land holding distribution. Thomas (2003) indicates that in many developing countries, the argument for and against land reform seems to revolve around ethical and economic reasons. The ethical argument for land reform is based on the twin principles of equity and social justice.[‡] Rectifying the historical land injustices not only does it ensure social justice, but it can also affect the rate of long-term growth and reduce poverty (Acemoglu et al., 2001; Toulmin, 2000).

The economic argument for land reform relies on the idea that if executed properly, land reform has a great potential to improve agricultural productivity, reduce poverty and unemployment, thereby making economic growth possible.

The potential benefits of land reform are well documented in the literature: land tenure rights, greater security of land ownership, increased agricultural production resulting from increased use of underutilized productive lands, reduction in poverty and unemployment, and hence, economic growth, and improvements in the levels of persistent inequality and the elimination of conflicting land laws. Thomas (2003), Juana (2006), Tshuma (2012) and Clover (2005) for example, argue that there is great potential for land reform to contribute positively toward the economic growth of a country and reduction in poverty levels. Tshuma (2003) and Lahiff and Cousins (2005) further stress that land titles enable the beneficiaries to also have

[‡] *The idea that if social justice is to prevail, land confiscated from the natives during the colonial era should be returned to its original owners and with that an equitable distribution of land among the populace would prevail.*

greater access to product markets. To this end, Kinsey (1999) shows that early beneficiaries of Zimbabwe's land resettlement program cropped twice the amount of land and earned more than three times the unit revenues of communal area families. Further, they report that these beneficiaries produced more agricultural output compared to communal areas during the 1990s. Taking these observations in to account May (1998) suggests that South Africa's authorities should tailor resources towards land reform if they were to reduce the widely prevalent problem of income inequality in the country. Deininger (2003), Wily (2000) and Clover (2005), however, indicate that materializing the benefits of land reform requires the existence of well-defined and secure land rights to the beneficiaries. The IMF delegation to Swaziland, in a November 7, 2012, announcement, recommended Swaziland to pursue a land reform program that provides secure property rights to the beneficiaries in order to reduce poverty in the country.

Land reform also has certain potential pitfalls: an inefficient use of the redistributed land, non-compensation or improper compensation to the owners of redistributed land, lead consequently to civil and political unrest. Lahiff and Cousins (2005) for example, report that as most land reforms in SADC countries lack post land reform supports are leading to ineffective use of the distributed land. Deininger (1999) highlights three main problems on the part of beneficiaries associated with past land reforms implemented in several developing countries: lack of adequate amount of resources to work on the acquired land, ineffective entrepreneurial decision making skills, and lack of complementary supports such as access to output and credit markets. When comparing the potential benefits and the pitfalls, an overwhelming body of the existing literature indicates that when executed well, the positive effects of land reform generally outweigh its pitfalls (Binswanger and Deininger, 1993; May, 1998; Kinsey, 1999; Deininger, 2003; Clover, 2005; Lahiff and Cousins, 2005; Juana, 2006; Tshuma, 2012).

Deininger (2003), who systematically reviews the various measures that constitute land reform programs implemented in several developing countries, indicates that although we can identify various forms depending on the nature of tweaks used in implementing them, the most commonly used land reform programs rely either on expropriation of land (with or without compensation) and/or the activation of land rental markets (willing seller and willing buyer, hereafter to be simply called WSWB). No clear cut answer as to which of the two approaches is the best, however, exist. WSWB is a market based approach which involves two parties, a seller and a buyer. Specifically, a land holder willingly puts his/her land on sale without pressure from the government, and a willing buyer who can afford the market value of the property on sale would buy the property.

The major assumption behind this argument is that when a willing seller and a willing buyer agree on a price, the price would account for prices of comparable properties, the future potential of the particular property and all its lucrative possibilities (Ng'ong'ola, 1992); this ensures that the sellers of land receive a fair compensation and is also compatible with the international law governing the transfer of property. Proponents of the WSWB approach, including the World Bank, argue that a market based land reform approach aids reconciliation between natives and Europeans who hold most of the land, and imposes the least disruption on economic activity such as agricultural production.

The single most important documented drawback of the WSWB approach, as evidenced in South Africa, Namibia and Zimbabwe, is that its implementation is usually too slow (Cliffe, 2000; Fortin, 2005; Dlamini, 2007). In Zimbabwe, for instance, in the 1990s a majority of the farmers who owned more than one farm remained unwilling to reduce the size of their land holdings by selling some of it to the government for redistribution purposes. In South Africa and

Namibia, a majority of the white farmers remained unwilling to offer their land for sell claiming the monetary compensation provided by the government was too low when compared to the market value of their properties. The slow pace of the WSWB approach can thus lead to civil unrest, especially in the event that the land hungry majority becomes impatient. This is evidenced by the disruptions caused by war veterans in Zimbabwe between 2000 and 2005 (Richardson, 2005). In addition, in SADC countries, the failure of most post-independence governments to recognize colonial era land title deeds (stemming from the view that land holders with such title deeds did not pay for the land to begin with) also provided a major constraint to the success of the WSWB approach.

Critics of the WSWB approach thus assert the need for a fast paced land reform approach based on the notion that doing so would enable solving land related problems in developing countries more quickly and hence avoids civil unrest. Fortin (2005) for example, argues that South Africa's market based land distribution approach was insufficient to deal with the ever-growing inequality and poverty. Cliffe (2000) and Dlamini (2007) similarly argue that the WSWB approach was unsuitable for speedy land redistribution in South Africa because it was too slow. To ensure a fast paced redistribution of land, most SADC countries have consequently adopted land reform policies that were based on expropriation (with or without compensation). For example, Zambia and Tanzania adopted the nationalization of land (the government takeover of the ownership of land) during the 1960s and 1970s. In Malawi, Namibia, Zambia, and Zimbabwe, under-utilized land, excessive land areas owned by foreigners, absentee land lords and farms with a record of abusing native workers were justified reasons to expropriate land from its current owners (Ng'ong'ola, 1992; Treeger, 2004). One major disadvantage of expropriation is that it unsettles the commercial farmers who are mainly of European origin, and

this may have a negative impact on economic growth. Expropriation can be costly for economic growth when it leads to a mass exodus of experienced and well mechanized commercial farmers as was the case in Zimbabwe. Richardson (2005) argues that land expropriation by Zimbabwe from the year 2000 through 2005, led to a loss in property rights on the part of commercial farmers and this contributed to the collapse of the economy. Secure property rights are important for economic growth, once damaged or removed will lead to economic implosion. The announcement by the Namibian government in 2004 to expropriate land brought immediate uncertainty about the legal ramifications of expropriation, (Treeger, 2004). The same argument applies to the uncertainty about the future of farmers whose land is likely to be targeted for expropriation. Such uncertainty on the future of farmers is usually enough to drive away commercial farmers to neighboring countries as was the case in Zimbabwe.[§]

Economic efficiency would be achieved if the land reforms lead to an outcome that could maximize the welfare of the country as a whole. The best outcome would be a balance between equity and efficiency, a choice between expropriation and willing seller-willing buyer reforms by analyzing the pros and cons of each option (Acemoglu et al., 2001; Toulmin, 2000).

Given the potential advantages and disadvantages associated with each of the land reform approaches, it is important to investigate to what extent they affect the standards of living of the population using a formal economic framework rather than *a priori* subjective judgments. Our study thus provides a platform to investigate how each of the two approaches used in implementing land reform over extended periods of time fare in influencing the economic

[§] *Other examples of countries that had implemented land reforms programs include Mexico, and Japan. In Mexico, land seized from the natives since the 1870s was ordered to be returned to its original owners starting from 1915 by General Venustiano Carranza. Mexico's most extensive, expropriation based land redistribution took place between 1934 and 1940 In a nutshell, land reform in Mexico is regarded as one of the most successful land reforms administered in the twentieth century (Merrill and Miró, 1996).*

growth and development of people in the SADC countries. In addition, we will also investigate the combined effect, of the two land reform approaches on standards of living in SADC countries.

While existing studies do provide useful analyses on land reform, none of these studies have used a formal economic framework that separates the effect of different ways of executing land reform on the standard of living. To our knowledge, no study has examined the impact of land reform on the standard of living on a regional scale. This study aims to contribute to the existing literature by empirically investigating how the land reform approaches that have been employed by SADC countries, have impacted economic growth through their effects on agricultural investment and social stability.

We posit that the impact of each of the methods of land reform begins the moment when the government announces the approach it will use to address the land problem. For instance, if the government announces that expropriation without compensation will be used, this may impact agricultural production immediately as farmers may not farm during the year the policy was announced as well as during the subsequent years as their farms could be seized anytime, with or without crop.

IV. Empirical Model and variable description

The empirical analysis of this study posits the existence of indirect effects between land reform policies and agricultural performance through the channels land development and civil unrest. Thus, to quantify the potential direct and indirect effects of the two main land reform approaches on agricultural output, we develop the following system of equations:

$$\ln AGGDP_{kt} = \beta_{10} + \beta_1 \ln Laggedfertility_{kt} + \beta_2 \ln lifeexpectancy_{kt} + \beta_3 \ln landdev_{kt} \\ + \beta_4 Civilunrest_{kt} + \varepsilon_{kt}$$

$$Lnlanddev_{kt} = \beta_{20} + \beta_{21}Lnfertility_{kt-5} + \beta_{22}Lncapital_{kt} + \beta_{23}Lnland_{kt} \\ + \beta_{24}Civiltot_{kt} + \beta_{25}WSWB_{kt} + \beta_{26}Nocompexpro_{kt} \\ + \beta_{27}Partcompexpro_{kt} + \beta_{28}Fulcompexpro_{kt} + \mu_{kt}$$

$$Civilunrest_{kt} = \beta_{30} + \beta_{31}Lnfertility_{kt-5} + \beta_{32}Lnland_{kt} + \beta_{33}WSWB_{kt} \\ + \beta_{34}Nocompexpro_{kt} + \beta_{35}Partcompexpro_{kt} + \beta_{36}Fulcompexpro_{kt} \\ + \eta_{kt}$$

Where k = country (14 countries are included in our sample) and t = year (1980-2007).

Because of the importance of agriculture in the livelihood of the inhabitants of the SADC region, WSWB and expropriation will have a significant impact on the economy through the agricultural sector, hence the choice of the agricultural share of GDP as our dependent variable. The agricultural share of GDP, derived from FAOSTAT, is measured as agriculture value added as a percentage of GDP. According to FAOSTAT, agriculture value added is the net output of agriculture after adding up all outputs and subtracting intermediate inputs. The sector includes forestry, hunting, and fishing, as well as cultivation of crops and livestock production. For the purpose of this paper, $\ln AGGDP_{kt}$ is the log of agriculture value added as a percentage of GDP of country k averaged in five-year periods. $\ln Laggedfertility$, $\ln lifeexpectancy$, and $\ln landdev$ represent the log of five-year lagged fertility rate, the log of life expectancy at birth, and log of land development averaged in five-year periods. $\ln Land$ is the log of arable land and permanent crops area, derived from the FAOSTAT and averaged in 5-year periods. $\ln landdev$ is the log of land development, averaged in 5-year periods. This variable is used as a proxy for investment in agriculture. The value of the variable land development is calculated using average prices for the

year 1995 and includes physical data on livestock, tractors, irrigated land and land under permanent crops, etc. Civil unrest is measured as the total summed magnitude score of episodes of civil violence, civil warfare, ethnic violence, and ethnic warfare involving that state, averaged in five-year periods. As discussed earlier, our main variables of interest are WSWB and expropriation. WSWB is a dummy variable that takes a value of one if the country has used the willing seller-willing buyer approach to land reform, and zero otherwise. Expropriation captures the years in which a country uses expropriation to redistribute land. Three types of expropriation approach were used by countries of SADC: expropriation without compensation, expropriation with partial compensation, and expropriation with full compensation.

The econometric approach used to analyze the transmission effects of WSWB and expropriation approaches to land reform on agricultural GDP is based on panel data (14 countries over a period of 27 years) and Three Stage Least Squares (TSLS) estimation procedures. Our model comprises three equations as discussed above: one cross-country Ag GDP equation and two structural transmission equations describing the channel variables.

To estimate the indirect effects of willing seller-willing buyer and expropriation on Ag GDP through the transmission channels (civil unrest and land development), the coefficient for WSWB or Nocompexpro or Nocompexpro or Fulcompexpro in each transmission channel equation is multiplied by the coefficient of corresponding channel variable in the Ag GDP equation. To obtain efficient and consistent parameters, the above specified system is fully estimated using TSLS procedure. A potential drawback of using TSLS is its sensitivity to specification errors.

V. Regression Analysis

Table 2 presents empirical results of the system of equations specified above. It appears from Table 2 that land development and civil unrest have a statistically significant effect on Ag GDP. In particular, the statistically positive coefficient on land development indicates that an increase in investment in agriculture leads to a higher Ag GDP, *ceteris paribus*. Also, the coefficient on civil unrest indicates a negative association between civil and ethnic conflicts/war and Ag GDP. In other words, countries that faced civil unrests suffered devastating economic consequences, including the agricultural sector.

The third and fifth columns of Table 2 summarize the empirical findings for the channel equations. The central findings are seemingly at odd with the political economy literature. For example, the results of the agricultural investment equation show that two of the four land policy variables are statistically significant, namely WSWB and expropriation with full compensation. More specifically, the estimated coefficient on WSWB indicates that the market-based approach to land reform is associated with a 4.92 percent decrease in investment in agriculture. Although this result seems to contradict economic theory, a reasonable explanation could be that farmers who agree to sell their land would begin with the less fertile areas, which would be counterproductive from the perspectives of potential buyers. The second startling result, the statistically negative coefficient on the variable expropriation with full compensation, shows an average 4.22 percent decrease in investment in agriculture for every year that a country fully recompenses the owners of the land that was expropriated. In contrast, the social unrest channel indicates a much stronger statistical and economic significance of land reform variables. In particular, both expropriation and the market-based approach are accompanied with a decrease in social unrest, with WSWB having the most pronounced effect. In other words, these societies

characterized by a high degree of agrarian inequality would benefit greatly, in terms of social peace, from a land reform policy. Table 3 shows the indirect effects as well as total effects of WSWB on Ag GDP through the two channels. The estimates suggest that WSWB has the strongest effect on Ag GDP through the civil unrest channel than through the agricultural investment channel. For example, the implementation of WSWB land reform approach is associated with an increase of Ag GDP of about 3.21 percent because the occurrence of civil unrest falls by 2.45 percent. Looking at the transmission channels, the total effect of WSWB on Ag GDP is an increase of about 3.28 percent, *ceteris paribus*.

Turning to the second type of land reform, expropriation, the estimates (summarized in Table 4) reveal insightful differences among the three expropriation approaches. As mentioned above, governments used expropriation with full compensation, expropriation with partial compensation and expropriation without compensation as alternatives to WSWB land reform. Focusing on the civil unrest transmission channel, the estimates in Table 4 indicate that all three approaches to expropriation are accompanied with a reduction in civil unrest, with expropriation without compensation having the most noticeable impact. The positive coefficients of total effects resulting from the three types of expropriation suggest that expropriation not only reduces social discontent, it also increases Ag GDP. These results are consistent with the existing literature in political economy. For instance, Justino (2008) find social redistributive policies to be the most effective tool that can be employed to prevent the onset of civil unrest and reduce existing instability in India. In contrast to civil unrest, investment does not seem to be a significant transmission channel of expropriation on Ag GDP. Of the three types of expropriation, only one –expropriation with full compensation- exerts a statistically negative effect on land development. The negative sign is quite unexpected. Undoubtedly, land

development is an important contributor to Ag GDP as evidenced by the statistically positive coefficient of land development variable in the Ag GDP equation.

Comparing the total effect of WSWB to that of expropriation (with full compensation, partial compensation, and without compensation), two major observations stand out. The first observation shows that the total effect of expropriation on Ag GDP depends on the type of expropriation pursued by the government. In effect, expropriation without compensation and expropriation with partial compensation are accompanied with an increase of Ag GDP of about 2 percent each, while expropriation with full compensation reduces Ag GDP due to its strong negative impact on land development. The second observation highlights the relative importance of the market-based approach compared to expropriation. The estimates in Tables 3 and 4 indicate that the total effect of WSWB on Ag GDP is larger than the total effect of the expropriation approach. The difference is mostly due to the greater responsiveness of social unrest to the implementation of WSWB as opposed to expropriation.

VI. Conclusion:

This paper uses a sample of 14 SADC countries during the period spanning 1980-2007 to estimate the effects of several versions of land reform on agricultural GDP. We argue that land reform affects agricultural GDP through its effects on agricultural investment and social stability. We model these effects by developing an agricultural GDP equation as well as two transmission channel equations, namely civil unrest and land development. To account for the implementation of land reform policy, we use four different variables: willing seller-willing buyer (WSWB), expropriation with full compensation, expropriation with partial compensation,

and expropriation without compensation. The central finding of this paper is that land reform is accompanied with an increase in agricultural GDP via the two transmission channels. This positive impact of land reform on the economy is mostly driven by the importance of land reform on reducing social unrest, with WSWB having the most pronounced effect. The economically weak coefficients of the land development transmission channel might be explained by the learning curve theory. With both types of land reform, the then deprived and small family farmers are gaining access to larger agricultural areas. This transition could give rise to management issues, including the optimal level of investment on land necessary to achieve the maximum outcome.

Although both options appear to have a positive impact on the economy, the willing seller-willing buyer approach seems to be the most efficient way to redistribute land for agricultural production. However, caution should be exercised when interpreting these results. Above all, we need to make sure that our results are robust to different methodological specifications.

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Table 1: Land reform approaches in SADC countries

Country	Independence	Willing Seller Willing Buyer	Expropriation
Angola	1975 (Portugal)	2004-2007	2007-Present
Botswana	1966(Britain)		1970-Present (Land boards allocate land)
Democratic Republic of the Congo)	1960(Belgium)		1966-1980
Lesotho	1966(Britain)		1979-Present
Madagascar	1960(France)	1960-Present	1960-2004
Malawi	1964(Britain)	1964-present (Matrilineal inheritance)	
Mauritius	1968(Britain)	None	None
Mozambique	1975(Portugal)	1997-present	1975-1997
Namibia	1990(German,	1995-2004	2005-Present
Seychelles	1976 (Britain)	None	None
South Africa	1994(Britain)	1994-present	2006-present
Swaziland	1968(Britain)		1964-Present (Crown Land)
Tanzania	1963(Britain)	1999-Present	1960's-1970's
Zambia	1964(Britain)	1995-present	1964-1980
Zimbabwe	1980(Britain)	1980-1992	1992-present

Table 2: 3SLS estimates of the System of Equations Model (5-year averages)

Variable	Ag. GDP		Land Development		Civil Unrest	
	Coefficient	Std. error	Coefficient	Std. error	Coefficient	Std. error
Fertility	2.326***	(0.285)	0.795**	(0.388)	1.515*	(0.828)
Life expectancy	-2.103***	(0.575)				
Capital			1.538***	(0.142)		
Land area			-0.265**	(0.106)	0.625***	(0.178)
Land develop.	0.0991*	(0.0567)				
Civil unrest	-0.129***	(0.0327)	0.0659	(0.0527)		
WSWB			-0.492*	(0.257)	-2.485***	(0.517)
No comp. expro.			-0.332	(0.349)	-2.210***	(0.743)
Part comp. expro.			0.354	(0.246)	-1.373**	(0.531)
Full comp. expro.			-0.422*	(0.249)	-0.248	(0.582)
Constant	6.482**	(2.588)	-5.320***	(1.336)	-5.093***	(1.902)
Adjusted R ²	0.5866		0.6584		0.3137	

Notes: Standard errors between parentheses.

*Significant at the 10% level

** Significant at the 5% level

*** Significant at the 1% level

Table 3: How WSWB Affects Agriculture Share of GDP

Channel	Effect of WSWB on the channel		Effect of the channel on Ag. GDP		Effect of WSWB on Ag. GDP
Civil unrest	-2.485***	(0.5166)	-0.129***	(0.0327)	0.321
Land development	0.0659	(0.0527)	0.099*	(0.0567)	0.00652
Total effect					0.328

Notes: Standard errors between parentheses.

*Significant at the 10% level

** Significant at the 5% level

*** Significant at the 1% level

Table 4: How Expropriation Affects Agriculture Share of GDP

Channel	Effect of expro without compensation on the channel	Effect of expro with partial compensation on the channel	Effect of expro with full compensation on the channel	Effect of the channel on Ag. GDP	Effect of expro without compensation on Ag. GDP	Effect of expro with partial compensation on Ag. GDP	Effect of expro with full compensation on Ag. GDP
Civil unrest	-2.210*** (0.743)	-1.373** (0.531)	-0.248 (0.582)	-0.129*** (0.0327)	0.285	0.177	0.0320
Land development	-0.332 (0.349)	0.354 (0.246)	-0.4217* (0.249)	0.099* (0.0567)	-0.0329	0.0350	-0.0417
Total effect					0.252	0.212	-0.0097

Notes: Standard errors between parentheses.

*Significant at the 10% level

** Significant at the 5% level

*** Significant at the 1% level

