

Land reform and agrarian change in southern Africa

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The interaction between the land redistribution programme and the land market in South Africa:
A perspective on the willing-buyer/willing-seller approach

Michael Aliber and Reuben Mokoena

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1. Introduction

The debate rages on, in South Africa and elsewhere, about the desirability and efficacy of the willing-buyer/willing-seller approach to land redistribution. In South Africa, the willing-buyer/willing-seller approach is frequently blamed for the fact that the government's redistribution programme has thus far fallen well short of expectations. To what extent is this judgement justified? Moreover, if the willing-buyer/willing-seller approach has indeed contributed to the unimpressive rate of delivery of the land redistribution programme, is this on account of certain aspects of the approach – i.e. which could be selectively remedied – or is the willing-buyer/willing-seller approach fundamentally unsuited to the task allocated to it?

The objective of this paper is to provide a partial answer to these questions. In short, the paper argues, on the one hand, that the willing-buyer/willing-seller approach is not as fundamentally ill-suited a mechanism to effect state-supported land redistribution as is commonly claimed. On the other hand, the paper suggests that the unimaginative manner in which the willing-buyer/willing-seller approach is being applied is definitely contributing to the slow pace of redistribution, and reflects a lack of vision and ambition among policy-makers.

The development of the argument involves examining the interaction between the land market and the redistribution programme from different angles. In one angle, we seek simply to gauge the magnitude of the land redistribution programme relative to the level of normal activity in the rural property market (Section 4). A second angle involves an econometric exercise to determine whether or not the redistribution programme affects market prices of rural land (Section 5). And from a third angle, we review the experiences and perceptions of estate agents and staff of the Department of Land Affairs, so as to shed light on some of the specific allegations as to how the land market may be inhibiting redistribution (Section 6). We begin, however, with two sections by way of background, the one offering a synopsis of the debate around the willing-buyer/willing-seller approach (Section 2), and the other reporting recent trends in the land market (Section 3). We conclude with an examination of a number of specific policy issues, some of which suggest promising avenues for policy development and some of which do not (Section 7).

2. The willing-buyer/willing-seller debate

Various known also as ‘market-based land reform’ (Riedinger et al. 2000), ‘market-led agrarian reform’ (Borras 2000), ‘negotiated land reform’ (Deininger 1997), ‘market-friendly redistribution’ (Deininger et al. 1999), and most recently – and opaquely – ‘community-based land reform’ (World Bank 2001), what we here refer to as the ‘willing-buyer/willing-seller approach’ evokes ideological disputes as well as disagreement as to what is and is not practicable. These differences are not assisted by the fact that people have different understandings of what willing-buyer/willing-seller means, as reflected in the proliferation of labels by which it is designated. One very strict interpretation, for example, is that in market-led redistribution, the state works to correct any market failures that exist (in land, capital, etc.), and then stands back and allows market mechanisms to drive the more efficient distribution of land (see El-Ghonemy 1999). On the other hand, most actual conceptualisations of willing-buyer/willing-seller programmes anticipate a significant ongoing role for the state, not least to provide capital to the ‘willing buyers’.

Palmer (2000a) traces the beginning of the willing-buyer/willing-seller approach to the insistence by Britain that newly



independent Zimbabwe adopt such an approach for its nascent land reform programme. Namibia and South Africa followed suit in due course, despite animated debate in the latter about the justifiability of the so-called 'property clause' during the drafting of the interim and then the new constitutions. South Africa's adoption of the property clause is widely understood to have been a gesture to promote investor confidence. Meanwhile, the World Bank seized on the idea of willing-buyer/willing-seller, some claiming that perhaps this was necessitated by its consistency with the Bank's general embrace of market liberalism (Carter 2001). Since 1995, most World Bank support to land redistribution programmes equates to support for the willing-buyer/willing-seller approach.

There are at least three levels to the debate about the willing-buyer/willing-seller approach. First, the least profound level of the debate concerns the question whether market mechanisms are preferable to non-market methods in pursuing the redistribution of land. As suggested above, this question is sometimes addressed naïvely. No one in southern Africa, for example, would think to suggest that the state should not have a major role to play even within a willing-buyer/willing-seller framework. However, even assuming an active role for the state, the question remains whether land to be redistributed should be expropriated from private owners, or rather purchased from them through open market sales. In our view, this is a question of what is pragmatic, at least in the short-term.

A somewhat deeper level of the debate pertains to the question whether market-based approaches are apt to work to the disadvantage of the poor, especially in light of various market imperfections that almost automatically discriminate against the poor. For example, one claim is that those having acquired land through some sort of redistribution are likely to end up forfeiting it, because 'imperfections' in capital markets are such that they are not able to use the land as profitably as would otherwise be possible. This, in turn, may result in the reconsolidation of land holdings to those for whom access to capital is not so problematic (Carter 1994). This concern relates to a longer-term perspective, but does not necessarily speak to the issue of what method should be adopted to pursue land acquisition.

Finally, at a still more profound level of the debate is the question whether the introduction of a market-oriented approach is an arbitrary legitimisation of the status quo pattern of land ownership – i.e. it presumes the assertion of property rights to existing property owners, regardless of the dubious

means by which the land came into their ownership in the first place (Bromley 2001). This question was at the heart of the disputes in South Africa over the formulation of the constitutional 'property clause'.

An epic moment in the willing-buyer/willing-seller debate occurred at the International Conference on Agrarian Reform and Rural Development (ICARRD), held in the Philippines in December 2000. According to one observer (Palmer 2000b), a lively exchange took place between Klaus Deininger, one of the most forceful proponents of the World Bank-promoted market-led approach, and Jeffrey Riedinger of Michigan State University, who sought to debunk that approach. The paper that Riedinger presented¹ has since become a rallying cry for those against the willing-buyer/willing-seller approach, which seemingly included most of the delegates to ICARRD. The paper makes six main points, corresponding to the main section headings:

- 'A market-based approach to agrarian reform will redistribute little land and benefit few landless families.'
- 'A market-based approach to land reform is likely to be unaffordable to the would-be beneficiaries because the 'market' value of land exceeds the agronomic value of the land.'
- 'If implemented, large-scale market-based agrarian reform will drive up land prices, effectively excluding poor farmers from the benefits of reform.'
- 'Would-be beneficiaries of market-based agrarian reform lack access to affordable private credit markets to finance their share of the land cost.'
- 'The empirical record of market-based reforms offers little evidence that this approach will result in rapid or significant redistribution of land.'
- 'Uncertainty in the agricultural sector can best be addressed by a clear commitment to rapid completion of conventional – compulsory acquisition-based – agrarian reform.' (Riedinger et al. 2000.)

Not surprisingly, a number of these same points are echoed in criticisms made of South Africa's approach to land redistribution. For example, Lahiff and Scoones (2001) state that: 'Both restitution and redistribution have suffered from over-reliance on market mechanisms to acquire land and cumbersome and ineffective bureaucratic processes.' Similarly, the National Land Committee (2000) has written that:

A key limitation underlying redistribution is the [Constitutional] protection of property rights of current



landowners, and the guarantee of compensation for land transferred. The effect of a 'willing-buyer, willing-seller' framework and the requirement of 'fair and just' compensation for existing land owners, is the placing of financial constraints on the extent of land transfer.

Successive limited national budgets for land reform made the RDP's 30% target for redistribution unattainable by 1999.

Even the government itself has publicly questioned the willing-buyer/willing-seller approach. For example, the Ministry of Agriculture and Land Affairs' preliminary review of the redistribution programme in December 1999 claimed that 'marginal land [is] being bought at exorbitant prices, turning white landowners into instant millionaires'.² A year later, the Minister and the Director General of the Department of Land Affairs again attributed the delay in land reform to high prices demanded by landowners, 'once more raising the threat of expropriation while simultaneously defending market-based solutions' (Lahiff 2001).³

Interestingly, of the major changes to the government's approach to redistribution unveiled in the new Land Redistribution for Agricultural Development (LRAD) initiative, none is directed at the manner in which the land market is relied upon. Notwithstanding the government's vocal criticisms of landowners' ability to hinder redistribution, and thus implicitly of the willing-buyer/willing-seller approach, that approach remains entirely intact.

3. Recent trends in the land market

This section reports recent trends in the rural land market. The trends are interesting in themselves, but also form an important backdrop for the question of what effect the land redistribution programme may be having on the land market.⁴

Table 1 shows the average price per hectare for the whole of South Africa from 1995 to 2000, stated in constant 2000 Rand. The table shows a marked downward trend in average per hectare prices from 1995 to 1998 – by about 28% for the whole period – and thereafter a partial recovery. Average land prices in 2000 were about 14% lower than in 1995.

Table 2 shows annual average prices per hectare disaggregated into various size categories for the whole of South Africa from 1995 to 2000, also stated in constant 2000 Rand. The table shows a significant inverse relationship

Year of purchase	Average price per hectare	Annual percentage change	Percentage change relative to 1995
1995	1 204		
1996	1 048	-13.0%	-13.0%
1997	992	-5.3%	-17.6%
1998	866	-12.7%	-28.1%
1999	936	8.1%	-22.3%
2000	1 031	10.1%	-14.4%

Size category (hectares)	1995	1996	1997	1998	1999	2000	% change 1995-2000
1-5	111 784	110 327	112 646	104 663	90 991	113 171	1.2%
6-20	27 135	27 604	27 371	23 501	23 643	25 371	-6.5%
21-100	8 578	8 658	8 663	7 488	7 442	8 127	-5.3%
101-500	1 942	1 926	1 873	1 726	1 730	1 755	-9.6%
501-1 000	963	962	978	859	903	989	2.7%
1 001-5 000	450	489	451	451	506	489	8.8%
5 001+	131	160	205	267	148	194	48.0%

between average per hectare prices and property size. That is, the smaller the property the higher the average price per hectare and vice versa. There are several reasons for this relationship, including the fact that very small properties tend to be for residential purposes (and the average price per hectare subsumes the value of houses and other 'improvements' on the property), as well as the fact that among true farm properties, larger farms tend to be of lower quality land, for example extensive grazing land rather than arable land. The table also shows that the downward trend in average per hectare prices reported in the first table holds as well for most of the size categories, and is especially strong for the smaller size categories. This may reflect the fact that the market for 'plots' – i.e. small agricultural holdings on the periphery or cities and large towns – has become especially weak in the last few years.



Table 3: National average prices per hectare per size category, 1995 to 2000

Size category (hectares)	Share of total no. of transactions	Share of total area transacted	Share of total value of transactions
1–5	17.3%	0.1%	9.9%
6–20	16.0%	0.4%	9.4%
21–100	20.2%	2.0%	16.0%
101–500	24.5%	13.8%	25.2%
501–1 000	10.5%	15.5%	14.5%
1 001–5 000	10.0%	43.0%	20.2%
5 001+	1.4%	25.3%	4.8%
All	100.0%	100.0%	100.0%

One might be curious to know why the overall price trend between 1995 and 2000 is downwards, even though some of the larger size categories experienced upward movements. The reason is that, although parcels larger than 500 hectares account for almost 84% of the transacted area, their share of the total value is less than 40%. It should also be noted that the huge increase in the average price per hectare for properties that exceed 5 000 hectares reflects a very small number of transactions, thus one might reasonably expect an even greater

Table 4: Average per hectare prices by province, 1995 to 2000

Province	1995	1996	1997	1998	1999	2000	% change 1995–2000
Eastern Cape	735	690	707	483	539	584	–25.8%
Free State	832	863	719	641	751	800	–4.1%
Gauteng	12 245	12 645	8 574	7 300	8 127	4 735	–158.6%
KwaZulu-Natal	2 856	2 761	2 497	2 610	2 509	2 457	–16.3%
Limpopo	1 123	1 048	946	865	946	1 163	3.5%
Mpumalanga	1 055	1 163	1 195	1 074	1 278	1 563	32.5%
North West	1 689	1 401	1 538	1 568	1 673	1 749	3.4%
Northern Cape	222	198	189	167	207	215	–2.9%
Western Cape	1 826	1 431	1 726	1 089	1 442	1 735	–5.2%

degree of price volatility than characterises the land market generally. Table 3 provides detail on the share of transactions by number, area and value, for each of the same size categories indicated above.

Finally, Table 4 shows the real average prices per hectare from 1995 to 2000 at the aggregate provincial level. There are strong downward trends for the Eastern Cape and Western Cape, a spectacularly strong decline for Gauteng, and a strong increase in Mpumalanga. The table also reveals that the price volatility in the land market has a geographical dimension. Clearly, there is much more volatility in land prices than is suggested by national averages.

4. The prevalence of redistribution projects in the land market

By most measures, the land redistribution programme accounts for a small share of the activity in the rural land market. This is not surprising, given that the total amount of land redistributed to date through the redistribution programme is around 1% of the total commercial farmland area of the country.

Table 5 shows the amount of land redistributed under the land redistribution programme as a share of the total land transactions registered in the Deeds Office database from 1995 to 2000, as well as a share of the total commercial agricultural land. For example, the land redistributed in 1999 to land reform beneficiaries was only 3% of the total land transactions reported by the Deeds Office for that year, and was only 0.2% of total commercial farmland. The results also show that out of approximately 33 million hectares of land transacted from 1995 to 2000 as reported by the Deed Office, only 2.3% was by way of land redistributed under the land redistribution programme, which constituted only 0.8% of the total commercial farmland.

Table 6 shows the amount of land redistributed by DLA as a share of rural land transactions, on a province-by-province basis. The data are aggregated over the period 1995 to 1999. The table reveals significant provincial variation in the extent to which the redistribution programme figures in the rural land market, with a high of 12% for KwaZulu-Natal, and a low of 0.4% for the Western Cape. Among other things, this means that one might expect to find that redistribution is having an impact on the land market (e.g. exerting an upward pressure on land



Table 5: Shares of the land redistributed relative to total land transactions and total commercial farmland, 1995 to 2000

Year	Land redistributed by DLA (ha)	Total rural land transactions (ha)	Land redistributed as % of total rural land transactions	Land redistributed as % of total commercial farmland
1995	11 171	4 721 085	0.2%	0.01%
1996	67 887	4 617 915	1.5%	0.08%
1997	140 524	5 719 425	2.5%	0.16%
1998	273 416	6 494 852	4.2%	0.32%
1999	174 287	5 704 042	3.1%	0.20%
2000	89 409	5 500 000 *	1.6% *	0.10%
Total	756 694	32 757 319	2.3%	0.88%

* Estimates

Sources: DLA (1995–2000); Deeds Office data (1995–2000); and *Abstract of Agricultural Statistics* (1999).

Table 6: Percentage shares of the land distributed to the total land transactions per province, aggregated over 1995 to 1999

Province	Land redistributed by DLA (ha)	Rural land transactions (ha)	Share
Eastern Cape	45 507	2 649 807	1.7%
Free State	65 117	3 869 432	1.7%
Gauteng	4 913	404 231	1.2%
KwaZulu-Natal	162 549	1 324 063	12.3%
Limpopo	26 484	3 029 095	0.9%
Mpumalanga	29 556	2 093 044	1.4%
North West	13 695	2 558 270	0.5%
Northern Cape	371 120	7 922 420	4.7%
Western Cape	15 110	3 406 957	0.4%

Sources: DLA (1995–1999); Deeds Office data (1995–1999).

prices) in KwaZulu-Natal, but certainly not in the Western Cape or North West. It is noteworthy that KwaZulu-Natal registered one of the larger declines in land prices over this period.

The purpose of Table 7 is to convey a sense of how active the rural land market is in different parts of the country. On average, over this 5-year period, 6.3% of all rural land was transacted per year. While there is a fair amount of provincial variation, the least active province, which is Eastern Cape at 5%,

Table 7: Shares per province of total land transactions to total commercial farmland, 1995 to 1999			
Province	Average annual land transactions (ha)	Total commercial farmland (ha)	Share
Eastern Cape	529 961	10 815 867	4.9%
Free State	773 886	11 572 000	6.7%
Gauteng	80 846	828 623	9.8%
KwaZulu-Natal	264 813	3 439 403	7.7%
Limpopo	605 819	7 153 772	8.5%
Mpumalanga	418 609	4 486 320	9.3%
North West	511 654	6 785 600	7.5%
Northern Cape	1 584 484	29 543 832	5.4%
Western Cape	681 391	11 560 609	5.9%
RSA	5 451 463	86 186 026	6.3%

Sources: Deeds Office data (1995–1999); *Abstract of Agricultural Statistics* (1999).

is still quite ample. It is important to note that these figures do not include land changing ownership via inheritance or expropriation.

The overall conclusion to be drawn from these tables is that, as of 1999, redistribution accounted for an extremely modest share of the vibrant activity that characterises the rural land market. The implication is that, strictly in terms of volumes, the land market cannot be said to have inhibited the redistribution programme. Of course, geographical variation, as well as other aspects of the land market, must be examined.

In terms of geographical variation, one interesting point to be noted is that the spread of redistribution projects is highly uneven. As of the end of 1999, there had been 408 redistribution projects across the country, meaning an 'average' of 1.4 projects for each of the 288 districts with an active land market (i.e. outside of the former homeland areas). However, these were not spread evenly through the country. Table 8 reports how many magisterial districts have hosted various numbers of redistribution projects. The table reveals that, of the magisterial districts with an active land market, almost 52% have not had a single redistribution project between 1994 and 1999. Another 23% have had only one redistribution project. Meanwhile, a small handful of districts, about 10%, have had four or more projects. Altogether, about 46% of the projects have



Table 8: Prevalence of redistribution projects among magisterial districts, 1994 to 1999

Number of redistribution projects per district	Number of magisterial districts	Number as percentage of total
0	149	51.7%
1	66	22.9%
2	21	7.3%
3	22	7.6%
4	11	3.8%
5 +	19	6.6%
Total	288	100.0%

taken place in less than 7% of the 288 districts with an active land market.⁵

This implies two things. First, there are large swaths of the country where, as of the end of 1999, redistribution had not happened at all, or only to a very small extent; and second, whatever effects redistribution projects may have had on the land market are likely to have been quite local.

One constraint of the foregoing analysis is that it ends at the conclusion of 1999. What has happened in 2001 and to some extent 2000 is difficult to judge due to lack of data. However, given that the Department of Land Affairs's redistribution expenditure declined from R358 million in 1998/99, to R173 million and R154 million in 1999/2000 and 2000/01, respectively, it is safe to assume that the overall scale of redistribution in 2001 was lower than in 1999 and 2000.

5. The effect of the land redistribution programme on the land market⁶

Strict economic reasoning would suggest that the land redistribution programme would have the effect of increasing land prices over what they would have been in the absence of the programme. Riedinger et al. (2000) assert that this effect would be such as to make the programme unaffordable. Similarly, in a 1999 report on the property tax tabled before the Parliament's finance portfolio committee, the Department of Land Affairs suggested that the

upward pressure exerted by redistribution on land prices might constitute a rationale for a price-depressing land/property tax:

It stands to reason that as delivery continues to pick up, land redistribution could so increase the aggregate demand for land as to exert a noticeable upward pressure on land prices. If the price-flexibility of land is around -0.2 ... , then a 12% net addition to the aggregate demand for land (e.g. if the DLA doubles its budget and delivers at capacity) could force an increase in prices of around 2%. Therefore, a countervailing downward pressure on land prices might be desirable, not just for land reform, but for others seeking to get into agriculture.⁷

On the other hand, landowners are sensitive to changing patterns of land ownership and settlement in their immediate surroundings. This sensitivity among mainly white farmers can have tangible effects. For example, in the eastern part of Bloemfontein magisterial district, a number of redistribution projects took place in 1996/97. Initially, these sales took advantage of the fact that land prices close to Botshabello and Thaba 'Nchu tended to be relatively modest. However, the concern of other white landowners in the area was such that these initial projects seemingly set off a 'chain reaction' of white farmers wishing to sell, spreading west from Thaba 'Nchu back towards Bloemfontein.⁸ Estate agents and remaining farmers in the area report that none of the whites' fears were realised, but the effect on the land market was nonetheless very real.

This is not to suggest that landowners' fears are necessarily racist or strictly irrational. Stock theft and fence cutting can seriously affect farming profitability, and occur in some commercial farming areas on such a scale as to compel a change in the pattern of production there. (In certain areas of the country, farmers have switched from sheep to cattle, because sheep have proven to be more easily stolen; similarly, some farmers have switched from maize and beans to soya, because soya is less likely to be stolen.) However, there is also a racial element, which Land Affairs officials come into contact with on a daily basis. Many landowners presume that if an adjacent property is acquired by black people, then these problems will necessarily increase, especially if the new black neighbours do not conform to the model of a single nuclear farming family.

There is no *a priori* rationale for gauging which of these two countervailing forces should be greater, i.e. the positive pressure due to the exogenous increase in land demand, or the negative pressure associated with white property owners' wishes to not have black neighbours. Perhaps the most reasonable



expectation, in fact, is that thus far the land redistribution programme has been simply too modest in scale to have had any effect on land prices. This paper bears out that indeed the scale of the redistribution programme has been very small relative to normal land market activity, even given the recent poor performance of the land market. What the paper also reveals is that land redistribution is not spread evenly throughout the country, but rather tends to occur with greater frequency in some districts. What we can say is that, if redistribution does have any sort of effect on land prices, then this will most likely be observable locally.

This section presents the results of an econometric analysis of the effect of land redistribution on land prices between 1995 and 1999. The analysis attempts to link changes in average land prices at the magisterial district level, to the intensity of land redistribution activity in that district.

5.1 Approach

The econometric model explored here relates the average per hectare price of land in a given magisterial district in a given year to the amount of activity in the land market, and the amount of land redistribution activity also taking place in that district in that year. The variables are formulated and combined in a number of different ways in order to better understand the relationships between them.

The data set used covers both districts and time, in other words, it has both cross-sectional and time series dimensions. This provides what is known as 'panel data' or 'pooled data'. Accordingly, special econometric techniques for panel data can be applied. The relationship between the dependent variable (i.e. average per hectare price) and the explanatory variables (i.e. land market activity, redistribution activity, etc.) is tested in

Table 9: Six econometric models				
Model	Dependent variable	Explanatory var. 1	Explanatory var. 2	Explanatory var. 3
I	Log(PRICE)	T_NUMBER	RP_NUMBER	
II	Log(PRICE)	T_NUMBER	RP_NUMBER	RP_NUMBER_LAG
III	Log(PRICE)	T_NUMBER	HH	COMM
IV	Log(PRICE)	T_AREA	RP_AREA	
V	Log(PRICE)	T_AREA	RP_AREA	RP_AREA_LAG
VI	Log(PRICE)	T_AREA	HH	COMM

six main ways, relating to different ways of measuring and combining the explanatory variables.⁹ This is represented in Table 9.

Log(PRICE) represents the natural logarithm of the average per hectare price for a particular magisterial district in a particular year; T_NUMBER is the number of different rural land transactions in that district in that year; T_AREA represents the total number of hectares of rural land (in tens of thousands) transacted in that district in that year; RP_NUMBER is the number of redistribution projects approved for transfer in that district in that year; RP_NUMBER_LAG is the number of redistribution projects approved for transfer in that district in the *previous* year; RP_AREA is the total number of hectares of rural land (in tens of thousands) approved for transfer via the redistribution programme in that district in that year; RP_AREA_LAG is the total number of hectares of rural land (in tens of thousands) approved for transfer via the redistribution programme in that district in the *previous* year; HH is the total number of households included within projects approved for transfer via the redistribution programme in that district in that year; and COMM is the number of municipal commonage projects approved for transfer via the redistribution programme in that district in that year.¹⁰

The natural logarithm is used on the dependent variable to facilitate interpretation of the results. The purpose of using the lag values of RP_NUMBER and RP_AREA is to test the proposition that some of the effects of redistribution projects on the land price may not be contemporaneous, but rather occur after a lapse of time.

It should be noted that the models described above are ad hoc, in the sense that they are not based on a structural model about what determines land prices (e.g. supply and demand, or relative changes in profitability, etc.). The purpose of the exercise is not to 'explain' the variation of land prices, but rather to discern the relationship of land prices to other key variables, most notably having to do with redistribution. No doubt more sophisticated models could be devised, though whether they would shed additional illumination on the role of redistribution is another question.

Each of these six main models is tested with two different sub-sets of the data. First, each model is tested on the basis of all of the rural property transactions data. Second, the models are tested on the basis of a restricted data set, whereby only transactions of 100 hectares or larger and 5 000 hectares or



smaller are counted when determining the average price per hectare, as well as the T_NUMBER and T_AREA variables. The rationale for using this more limited data set is that the market for extremely small and extremely large properties may not be sensitive in the same way to the amount of redistribution activity occurring in that district. This restricted data set is smaller by 85 observations, or about 6%.

In addition, each of these six main models is tested with different estimators. The most important of these are the *fixed effects*¹¹ estimator and the *random effects*¹² estimator. In fixed effects (also known as the ‘least square dummy variable’, or LSDV, estimator), differences between cross-sectional units (in our case magisterial districts) are ascribed to fixed constants, i.e. dummy intercepts, which are assumed to be invariant over time, and which can themselves be estimated. In random effects, by contrast, the differences between cross-sectional units are assumed to be subsumed into the error term. For our purposes, since we lack a strong *a priori* preference for either estimator over the other, we test and report both.¹³ Besides the fixed effects and random effects estimators, we also report the results of the *between estimator*,¹⁴ which is a by-product of estimating the random effects model since the random effects coefficient vector is calculated as a matrix weighted average of the LSDV and between estimators. The between estimator is seldom reported in its own right in cases where the analyst is fortunate enough to have access to panel data, since it amounts simply to a regression of the dependent variable upon the explanatory variables, where all of the variables are captured as means per unit over time, thus in essence abstracting from the temporal aspect of the multivariate relationship. However, the results of the between regression can nonetheless be interesting, especially given that the time lag of effects is not always well-understood and is not necessarily the same in all districts.

Altogether, therefore, we run and report 36 regressions, six for each of the six ‘models’ described above. Certain adjustments to the estimators have to be made on account of the fact that the present panel is ‘unbalanced’. The panel is unbalanced in the sense that there is not a full complement of five data observations (for the number of years) for each and every district, thus some districts have fewer data observations than others. The usual scenario is that, in a given district in a particular year, there were no rural property transactions registered with the deeds registry, thus no average price per hectare can be calculated. (This is very different to saying that

land had no price – just that in the absence of transactions, the price is not observable.) This requires numerous adjustments to be made to the estimator. The necessary adjustments are made following Greene (2000:566–567, 577–578). The code was written and run using GAUSS 3.0.

5.2 Data

There are two types of data used in the present analysis. First, there are data specific to the land redistribution programme, namely, the number of redistribution projects, the amount of land involved in each project, number of households and commonage projects, location, year in which project was finalised, etc. These data came from the DLA's CPD (Critical Project Database) system, and in some cases were supplemented with data collected directly from the files kept on the premises of the DLA offices in Pretoria. On the whole, only 'regular' redistribution projects and commonage redistribution projects were included. Redistribution projects involving share-equity schemes were excluded because they often do not involve land purchase, and thus would not be expected to affect the market price of land, or at least not in the same way.

The second type of data pertains to activity in the land market more generally. These data were purchased from the Deeds Office, and were cleaned and manipulated as described in the technical notes accompanying the Land Price Data Base. The data purchased cover all rural property transactions that were registered between 1994 and 1999. Prices are all translated into 1999 Rand using the CPI deflator.

The main caveat to be noted in regard to these data is that our knowledge is imperfect in terms of knowing the magisterial district within which transactions took place. The Deeds Offices around the country do not typically record the magisterial district when a property transaction is registered. Rather, they indicate the 'registration division' or the 'administrative district', which may or may not have any correspondence to magisterial district boundaries. In order to identify the districts in which land transactions have taken place, the Deeds Office data were linked to the cadastre. The process of linking to the cadastre was largely successful, but resulted in the loss of about 8% of all the records for the country overall. The loss of these records is the result of either errors in the Deeds Office data, or errors in the cadastral data, or both. For the purposes of this exercise, this means that the dependant variable, $\text{Log}(\text{PRICE})$, is based on an incomplete list of transactions from that district, while the



T_NUMBER and T_AREA variables are somewhat lower than they should be for the same reason.

A second caveat relates to the fact that when the purchase of a property is registered with the Deeds Office, two dates are reported in conjunction with that transaction, namely the date of purchase and the date of registration. The date of registration is obviously the point in time when the transaction was registered with the Deeds Office, while the date of purchase is the point in time prior to this when the seller and buyer concluded their negotiations. Not infrequently these dates are far apart, and sometimes to such an extent that they occur in different years, though seldom more than one year apart. For the purposes of this exercise, 'purchase year' is considered more relevant than 'registration year', because the year in which the seller and buyer agreed on a price is the year in which we should look for effects on land prices. However, this presents a problem, in that not all transactions for which the purchase year was 1999 will be represented in our data set, since not all such transactions will have been registered in 1999, and until a property is registered, it does not appear in the data set. There is no attempt to correct for this problem directly.

5.3 Results

The results are presented below in Table 10. The results for the six different models appear sequentially, while for each model the results for the different types of estimators, and on the basis of the unrestricted and restricted data sets, are arranged across. Estimates of constants are not shown, including those of the 288 intercept dummies for the fixed effects model. T-ratios based on the zero-slope null hypothesis are reported beneath the estimated slope coefficients. N indicates the number of observations available for the regression, while R^2 , or coefficient of determination, gives an indication as to overall 'goodness of fit' of the fitted regression, meaning the extent to which the model 'explains' the variation of the dependent variable.

We look here mainly at the results for the six regressions run according to Model I. Starting with the results of the first regression (column [1]), i.e. for the fixed effects estimator for unrestricted data ('All ha'), the estimated slope coefficients can be interpreted as follows. First, everything else held constant, an increase of 1 in the number of rural property transactions (T_NUMBER) is associated with a 0.1% increase in the average land price, for all districts and years. Similarly, and more interestingly, an increase of 1 in the number of redistribution

Table 10: Full regression results for the six models						
Model/Variable	$\hat{\beta}_{FE}$ (fixed effects)		$\hat{\beta}_{RE}$ (random effects)		$\hat{\beta}_{BET}$ (between estimator)	
	[1] All ha	[2] 100–5 000 ha	[3] All ha	[4] 100–5 000 ha	[5] All ha	[6] 100–5 000 ha
<i>Model I</i>						
T_NUMBER	0.001 *(1.74)	0.000 (0.19)	0.001 ****(2.97)	-0.000 (0.53)	0.003 ****(3.99)	-0.002 (-1.10)
RP_NUMBER	-0.013 *(-1.93)	-0.006 (-1.06)	-0.014 **(-2.04)	-0.007 (-1.28)	-0.185 ****(-3.09)	-0.057 (-1.52)
N	1 353	1 268	1 353	1 268	288	276
R ²	0.918	0.857	0.102	0.189	0.065	0.017
<i>Model II</i>						
T_NUMBER	0.001 (1.60)	0.000 (0.08)	0.001 ****(2.85)	0.000 (-0.64)	0.003 ****(4.14)	-0.001 (-1.04)
RP_NUMBER	-0.013 *(-1.93)	-0.006 (-1.04)	-0.014 **(-2.03)	-0.007 (-1.23)	-0.581 ***(-2.39)	-0.259 *(-1.70)
RP_NUMBER_LAG	-0.005 (-0.73)	-0.005 (-0.84)	-0.005 (-0.75)	-0.006 (-1.09)	0.443 *(1.68)	0.227 (1.37)
N	1 353	1 268	1 353	1 268	288	276
R ²	0.918	0.857	0.103	0.190	0.074	0.024
<i>Model III</i>						
T_NUMBER	0.001 **(2.02)	0.000 (0.16)	0.001 ****(3.22)	-0.000 (-0.60)	0.003 ****(3.48)	-0.002 (-1.33)
HH	-0.000 (-0.75)	-0.000 (-0.42)	-0.000 (-0.80)	-0.000 (-0.40)	-0.001 (-1.52)	0.000 (0.08)
COMM	-0.007 (-0.31)	-0.011 (-0.60)	-0.014 (-0.65)	-0.019 (-1.05)	-0.712 ****(-3.39)	-0.437 ****(-3.32)
N	1 353	1 268	1 353	1 268	288	276
R ²	0.917	0.857	0.101	0.192	0.078	0.047
<i>Model IV</i>						
T_AREA	-0.028 ****(-4.94)	-0.033 ****(-4.13)	-0.041 ****(-7.66)	-0.047 (-6.68)	0.099 ****(-7.26)	-0.086 ****(-6.00)
RP_AREA	0.007 (0.34)	-0.007 (-0.40)	0.006 (0.31)	-0.013 (-0.78)	-0.033 (-0.24)	-0.185 **(-2.25)
N	1 353	1 268	1 353	1 268	288	276
R ²	0.919	0.859	0.136	0.228	0.181	0.147
<i>Model V</i>						
T_AREA	-0.028 ****(-4.94)	-0.033 ****(-4.15)	-0.041 ****(-7.65)	-0.047 ****(-6.71)	-0.103 ****(-7.28)	-0.085 ****(-5.94)
RP_AREA	0.006 (0.28)	-0.003 (-0.19)	0.005 (0.25)	-0.008 (-0.46)	0.386 (0.92)	-0.417 *(-1.70)
RP_AREA_LAG	0.003 (0.14)	-0.009 (-0.55)	0.002 (0.12)	-0.012 (-0.76)	-0.537 (-1.06)	0.308 (1.01)
N	1 353	1 268	1 353	1 268	288	276
R ²	0.919	0.859	0.137	0.228	0.184	0.150
<i>Model VI</i>						
T_AREA	-0.028 ****(-4.93)	-0.033 ****(-4.13)	-0.041 ****(-7.66)	-0.047 ****(-6.70)	-0.097 ****(-7.24)	-0.088 ****(-6.05)
HH	-0.000 (-0.78)	-0.000 (-0.22)	-0.000 (-0.75)	-0.000 (-0.10)	0.000 (0.69)	0.000 (0.76)
COMM	0.008 (0.35)	-0.003 (-0.14)	0.008 (0.35)	-0.007 (-0.40)	-0.277 (-1.34)	-0.324 ****(-2.58)
N	1 353	1 268	1 353	1 268	288	276
R ²	0.919	0.859	0.137	0.228	0.188	0.154



Notes to Table 10

t-values are given in parenthesis

* significant at the 10% significance level

** significant at the 5% significance level

*** significant at the 2% significance level

**** significant at the 1% significance level

$\hat{\beta}_{FE}$ estimated slope coefficients using the fixed effects of least squares dummy variable (LSDV) estimator

$\hat{\beta}_{RE}$ estimated slope coefficients using the random effects estimator via feasible generalized least squares

$\hat{\beta}_{BET}$ estimated slope coefficients using the between groups estimator

projects in a district is associated with a 1.3% *decline* in the average land price.¹⁵ The magnitude of this effect is huge, but the t-ratio of -1.93 on the RD_NUMBER variable is significant at only the 10% significance level, meaning that there is a 10% probability that the conclusion of a non-zero effect of redistribution is erroneous.

Moving across to the results of the next regression (column [2]), that for the fixed effects model but on the basis of the restricted data set, the results are not significant at any respectable level. However, the results of the third regression (column [3]), that of the random effects model based on the unrestricted data, agree very closely with those for the first regression. Here, an additional land redistribution project is associated with a 1.4% decline in average land prices. The t-ratio is such that the result is significant at the 5% significance level, thus lending some corroboration to the first regression. The results of the fourth regression (column [4]) are similar to those for the second regression. At least up to this point, the use of the restricted data set does not evince any significant statistical relationship.

Turning finally to the regression results for the between estimator, there is evidence of a very strong and negative relationship between the number of redistribution projects and prevailing land prices. Because of the nature of the between estimator, the interpretation of the estimated slope coefficients is, however, different to that of the other estimators. Here, one would observe that an increase in one in the average annual number of redistribution projects in a district is associated with a 18.5% decline in average land prices. The implication could be that sustained land redistribution activity in an area has a

disproportionately large impact on local land prices. For the sixth regression (column [6]), the results are not significant.

The results up to now provide some evidence that when land redistribution projects are introduced in a particular area, prevailing land prices decline. However, this conclusion is tentative, not least because all of those regressions conducted thus far on the basis of the restricted data set do not provide robust support for it. Moreover, we have yet to examine the results of all of the regressions associated with the other five models.

Before proceeding to discuss the other results, however, it is worth considering alternative explanations for the negative statistical relationship between land price and the extent of redistribution that has been found in some of the regressions. In particular, this statistical relationship does not in itself demonstrate a causal relationship, nor what the nature of such a causal relationship might be. It could be, for example, that rather than more redistribution leading to lower land prices, what in fact happens is that redistribution happens where land prices are lower. This second interpretation is not altogether without merit, in that places where land prices are especially high are known to be difficult areas to reach through redistribution. However, the geographical unit employed in this particular analysis is the magisterial district. Outside of Gauteng and the Cape Peninsula, magisterial districts tend to be large and heterogeneous areas, which may well contain some inaccessibly expensive farmland, but probably also more affordable farmland as well. Thus, this counter-explanation is not very compelling.

Most of the spatial determination of redistribution projects appears to be based on where the demand is expressed, and usually there is ample variation within a district to accommodate that demand. Unfortunately, the statistics themselves do not guide us towards the correct interpretation. Techniques for explicitly testing the time-dimension of causal effects would not necessarily assist, given the coarse annual nature of the data, though they could in principle be explored. As is usually the case, the evidence of a statistical relationship must be linked to an economic (i.e. causal) interpretation of that relationship, via a plausible leap.

The results for the other five models can be summarised as follows:

- In general, the results show either a negative relationship between average prices and the extent of redistribution, or no discernible relationship. There is no evidence of a positive relationship. The single exception is the estimated slope



coefficient on the RP_NUMBER_LAG variable (Model II) when using the between estimator, which is nonetheless smaller in magnitude and significance than the negative relationship estimated on RP_NUMBER in the same equation.

- The estimated slope coefficients of the fixed effects and random effects models tend to be very similar to one another.
- Where lags are included among the explanatory variables, there is little evidence that they have a strong, distinctive influence on land prices. This could suggest that the effects of redistribution on land prices, where they occur at all, are realised very quickly, which is not to say that they are dispelled quickly.
- The variable representing the number of households (HH) nowhere elicits a significant relationship to average land prices. However, for the between regression, the variable representing the number of commonage projects shows a strong negative relationship to land prices.
- Results tend to be insignificant where variables are measured in terms of area (hectares) rather than number, as in models IV–VI. The reasons for this are not at all obvious.

Taken as a group, we would summarise by saying that there is tentative evidence that land redistribution has the effect of lowering land prices locally, but the evidence is not overwhelming. There is, however, strong evidence against the supposition that redistribution exerts a *positive upward* pressure on land prices. If anything, the situation is the contrary.

5.4 Summary

This section has reported the results of an econometric examination of the relationship between average land prices and the extent of redistribution activity. The analysis can be considered preliminary in the sense that a number of issues have yet to be explored, for instance the presence of serial correlation and/or heteroskedasticity. However, the results do provide some evidence to support the contention that the redistribution programme has the effect of depressing land prices in the vicinity of its projects. While this conclusion is still tentative, the evidence against the supposition that redistribution puts upward pressure on land prices is quite strong. That the results are not more consistent and conclusive is most likely due to the fact that, thus far, the scale of the redistribution programme has been small relative to the overall level of activity in the land market.

6. Qualitative evidence as to how the land market inhibits the redistribution programme

A number of specific concerns have been raised about how the land market inhibits the land redistribution programme. In particular, four main assertions have been made: i) land is not available; ii) landowners collude to not sell to DLA beneficiaries; iii) land is too expensive; and iv) DLA beneficiaries end up acquiring inferior, marginal land. This section summarises the views that have been expressed by Provincial Department of Land Affairs (PDLA) staff on these themes, and offers some analysis on the basis of what we know about the land market.

6.1 Land is not available

The statistics in Section 3 above show that, overall, the amount of land available through the market is more than ample, and that the redistribution programme would have to be delivering at several times its present scale in order to begin to deplete the opportunities presented by the market. As a practical example, four years ago the PDLA in Limpopo province advertised in local papers that landowners should inform the office if they might be interested in selling their land. The response was large, and the PDLA has not come even close to exhausting the opportunities presented by those who responded.

However, despite the overall adequacy of the amount of land on the market, there is a perception on the ground that the land market is such that adequate land is not available to meet the needs of redistribution clients. The general sentiment expressed by PDLA staff is that while there is more than enough land available, land is not equally available everywhere. Since beneficiaries would in general prefer to remain where they are, or at least minimise the distance they must travel or relocate, they are frequently focussed on a narrow area, and may find that little land is available there, or may be particularly expensive.

As estate agents are inclined to point out, there is always land available provided one is willing to pay for it. Although a number of other factors enter into it, generally speaking an area whose commercial farmers are thriving is likely to be a seller's market, whereas an area where farmers are struggling is apt to be a buyer's market. Much or most of South Africa is presently a buyer's market, but some pockets remain where it is particularly difficult to afford land within the confines of the redistribution grant system. Viticulture areas in the Western Cape, and certain



highly productive cane areas in northern KwaZulu-Natal, for example, are doing quite well, and consequently are not easily accessed by prospective buyers financed primarily through government grants. By contrast, in the Queenstown district of the Eastern Cape, or the Bloemfontein district of the Free State, or the Bethal district of Mpumalanga, to mention just a few, it is very much a buyer's market. PDLA staff report that a high fraction of farmers in these areas would be quite pleased to sell off their farms, as the conditions for commercial agriculture (especially grain farming in summer rainfall areas) have been deteriorating for some time.

Another factor that contributes to land availability in specific areas is farmers' experience of, or perception of, security problems. Commercial livestock farmers in northern KwaZulu-Natal, for example, complain that profits have been severely cut by stock theft. Other landowners, e.g. those in the immediate vicinity of Johannesburg, have shown an eagerness to sell due to concern for personal safety. As tentatively supported by the econometric evidence reported in the previous section, what this suggests is that, owing to fears and prejudices among white landowners, land redistribution sometimes has the effect of improving land availability. What this also suggests is that a stepped-up pace of redistribution might facilitate further redistribution rather than the opposite.

A final point to be made in respect of land availability is that the PDLA may become aware of land being available in a variety of different ways. In part, this owes to the fact that different PDLAs have adopted different strategies for identifying available land, but even within a given PDLA there tends to be some variation. First, sometimes land is identified as available by applicants before they have even approached the PDLA. This could be owing to applicants' initiative, or it could be a 'seller driven' project in which the seller has suggested to his farm workers that they apply for grants so as to purchase the land.¹⁶ Second, PDLAs or applicants may sometimes rely upon estate agents to inform them what land is on the market, or may consult publications that list properties for sale. Third, some PDLAs have actively invited landowners to indicate their interest in selling their land. Fourth, sometimes PDLA staff approach owners to ask if they would consider selling, even owners who have not put their land on the market.

While each of these strategies may have its place, what is quite evident is that, in general, there is too little of the fourth strategy, that is, directly asking owners regardless of whether their land is known to be 'on the market'. In those cases where this does happen, it is often discovered not just that these

owners are willing to sell, but also that they are often willing to sell at a good price. One situation in which this has become evident is in the case of commonage projects, where typically the PDLA has few options in terms of where the land should be, and is thus forced to ask owners who have not put their land on the market. In the northern part of the Free State and parts of North West, for example, the PDLA has been able to snap up land for commonage projects at below market rates. Thus, whereas this sort of situation might be thought to have the effect of strengthening sellers' bargaining power, and thus making for a difficult transaction, it is frequently discovered that those who have not actually put their land on the market are quite willing to part with it, and at a reasonable price. Where the opportunity may be particularly great to pro-actively inquire about owners' willingness to sell, is in proximity to townships, squatter settlements, and former homeland areas. Large swaths of land could be acquired with ease in many such areas, notwithstanding the fact that present owners may not have the land on the market.

6.2 Owners collude to not sell

A specific situation in which land may not be available in an area is when owners there collude with one another to not sell to redistribution applicants. Most PDLA staff can cite one or two examples where this has happened or where they have suspected it of happening. The issue in this instance is not that the land market is too inactive in the area, but that owners exert pressure on one another to not sell for land redistribution, i.e. to blacks. The collusion can take different forms. The subtlest is simply when owners in an area put personal pressure on an owner who might otherwise be willing to sell to DLA. This allegedly happened in a would-be project near Magudu, in northern KwaZulu-Natal, where farmers colluded with one another (and possibly with the consultant who had been hired by the DLA to facilitate the project) to prevent the progress of a project. A more active form of collusion is when farmers come together to outbid DLA, as has seemingly happened in the Bochum area of Limpopo. One provincial representative of organised agriculture, indicated that some farmers who might otherwise be willing or even eager to sell, readily hesitate to do so because of this sense of pressure from one's neighbours. The representative indicated that in some such instances, owners might even welcome expropriation as a face-saving way of parting with their property while still obtaining compensation for it. This presumes that the compensation would be not



hugely inferior to what the owner could obtain through a market sale.

While collusion to not sell to redistribution beneficiaries is certainly a problem, according to PDLA staff it is not a problem of major proportions. It is known or thought to occur in a few specific parts of the country, and even there sometimes eventually proves unsuccessful, since many owners ultimately have no choice but to sell. However, these instances of collusion, however atypical, are very damaging, not least in feeding the perception that the market mechanism is primarily at fault for slow delivery. In those areas where collusion does have a serious impact in deterring redistribution, the government should not hesitate to initiate expropriation procedures. This may be expeditious not only for the project/property in question, but also as a disincentive to other owners in the area to interact in bad faith with applicants and the government.

6.3 Land is too expensive

The notion that 'land is too expensive' is articulated in a number of different ways. For example, the National Land Committee and land NGO affiliates have indicated that the willing-buyer/willing-seller programme is too expensive, because it means government must pay market prices (see NLC 1998). Under the pre-LRAD programme, many people expressed the view that the price of land was simply high relative to the small size of the grant, and thus had the effect of compelling applicants to form large groups – which often turned out to be unmanageable – in order to be able to purchase the land. This latter is a practical consideration which owed more to the nature of the grant policy than to 'exorbitant' land prices. Finally, it is sometimes asserted that land purchased by land reform beneficiaries via grants tends to be purchased at prices that are high relative to the 'true' market price, as suggested by the Ministry's report quoted in Section 2. It is mainly this latter sense of 'too expensive' that we examine.

To this end, PDLA staff were asked whether they agree with the perception that DLA tends to over-pay for land, and if not, whether they have any intuition as to the source of that perception among others.¹⁷ Not surprisingly, most respondents indicated that there is no such tendency, yet most could also think of an instance where probably too much money had been paid.

One such instance, which has become almost legendary, is a particular restitution case in Northern Cape. In this case, the settlement of the restitution claim was being hindered by the landowner, who was holding out for a price around two times

that of the market price as established by the DLA's valuation. However, national politicians happened to seize upon this particular restitution case for its symbolic value, and insisted that the project should be ready for a handover ceremony in time to coincide with National Heritage Day. After much energetic effort to break the impasse, the owner was eventually given something not far from his original price. Since this time, other landowners in the immediate area have made it clear to DLA that they will not consider selling their land (for redistribution) for less than this individual received.

Another well-known case is an early redistribution project in the Free State. By all accounts, the project was inspired by a landowner who was eager to sell his property, which he sought to do by rounding up a large group of beneficiaries. When the provincial DLA office balked at the project, due in large part to concerns over the asking price (as well as other problems), the beneficiary group itself approached a local political party branch, which mobilised considerable pressure for the project to be approved. The seller's role in encouraging the beneficiary group to express their dissatisfaction through political pressure has been alleged, but remains unclear.

These examples point to an uncomfortable fact, namely that, because they tend to be sensitive to political demands, political leaders may show a tendency to push projects through hastily, even at the expense of properly concluding price negotiations. This underlines the importance of routine systems and procedures that rely as much as possible on objective decisions made on the basis of pertinent information.

As to why there may be an enduring impression that DLA tends to over-pay for land in general, PDLA staff expressed the view that this owes to the fact that in the early days of redistribution (e.g. 1995 and 1996) certain policies were not in place, staff were inexperienced in such matters and mistakes were made. Among the more important policy gaps was the one requiring a professional valuation. Early on, policies relating to valuation were relatively lax, for example at one point desk-top Land Bank valuations were considered sufficient to ensure the asking price was fair.¹⁸ Only in 1997, after Land Affairs officials had become sufficiently sensitised to the need to have more rigorous, appropriate checks, was the policy introduced of requiring independent professional valuations. Since then, this policy has probably saved the DLA tens of millions of Rand. However, there remain concerns in some quarters that some of the professional valuers on whom DLA relies are either under-qualified (or not adequately familiar with the market in that



area), or may actively collude with sellers to overvalue the latter's properties. While this conviction is not common to most PDLA staff who routinely work with valuers, there are certain areas in which this concern is very strong. Even some estate agents who are knowledgeable about DLA projects have expressed the opinion that DLA-commissioned valuations tend to be too high in their areas.

Apart from concerns with political interference and inept/corrupt valuers, PDLA staff find that virtually all landowners initially state a high asking price. However, most PDLA staff also indicate that the majority of sellers are negotiated down with little difficulty to the valuation price or even below.¹⁹ In many areas, the DLA is virtually the only buyer, so sellers who are intent on selling find themselves in a weak bargaining position. There remain, however, some sellers who are not easily negotiated down. These latter either eventually withdraw their offer of sale, bring down their price a while later or sell to someone else. These instances have the effect of impeding delivery, frustrating beneficiaries and wasting staff time.

The situation is particularly difficult where the applicants have a strong desire for a specific property. In principle, redistribution is different from restitution in that applicants can 'shop around' to find a property that suits them at a good price. In practice, however, it often does not happen this way. In some instances, the project is driven by an ESTA-related demand: applicants wish to acquire that particular property because it is has been their home for some years or even generations. In other instances, a particular property may have been identified early in the project cycle, and all subsequent planning – which may take a long time – is based on that particular property. Because the cost of starting over with a newly identified piece of land is so high, or because the applicants are focussed on that particular property for personal reasons, this means effectively that the seller has a monopoly. Rather than being concerned that the applicants may choose to buy someone else's property, the seller knows that he is in a good bargaining position. This is probably one of the critical weaknesses of the way the demand-led system tends to manifest itself, even under LRAD.

6.4 Beneficiaries end up acquiring inferior land

It is sometimes suggested that beneficiaries end up acquiring inferior, marginal land, as in the statement from the Ministry's report quoted in the previous section. Among PDLA staff, some agree with this view, while others do not. While we cannot offer

a technical evaluation of the relative quality of land that has been acquired through redistribution, we can comment on what emerged from interviews with PDLA staff; specifically on what the basis for this perception was among those who maintain that beneficiaries end up with inferior land.

There are two main points to be made in this regard. First, the perception that redistribution-acquired land is inferior appears to be mainly a proposition rather than an observation. The proposition, in a nutshell, is that farmers want to sell because they are in financial distress, and that they are in financial distress because their land is marginal. In other words, the fact that they are proposing to sell their land to DLA, is taken as evidence that their land is inferior. At least five PDLA staff who were interviewed offered explanations that followed this logic.

The second point is that this proposition is flawed, but it is also not altogether without merit. The flaw has to do with the fact that farmers have many reasons for wishing to sell their land, of which financial distress is just one, and which in itself is usually the result of factors other than land quality.²⁰ As Section 3 showed, an average of 6.4% of the country's agricultural land, i.e. some 5.2 million hectares, is bought on the open market every year, and the degree of market activity is fairly robust across all the provinces. To suppose that this land is overwhelmingly marginal strains credulity.

Taking a historical perspective, between 1950 and 1996 the number of commercial farms declined from 117 000 to less than 61 000.²¹ The decline of 48% represents a gradual, continuous process of rationalisation and amalgamation, a process very much like that characterising other middle and high-income countries during the course of the 20th century. As farm incomes decline relative to other opportunities offered by a growing, modernising economy, farmers and/or their children leave agriculture for more attractive options elsewhere. Correspondingly, average farm sizes increase. The fact that title deeds of farms reflect multiple portions, is largely the result of this historical process of consolidation. This broad-brush picture of temporal trends in commercial agriculture and landholding, leads to two conclusions. First, land purchases are dominated by existing farmers rather than by new entrants, which is why the average farm size increases while the number of farms declines. Second, the share of farmers who leave agriculture over the long-term is huge. This is so to such an extent, and covers all parts of the country, that it cannot be explained by relative land quality.

Nonetheless, there is one particular respect in which there is some merit to the proposition that beneficiaries end up with



inferior land. The reasoning goes as follows. When a farmer decides to put his land up for sale and markets it at a reasonable price – i.e. the price is reasonable taking the land quality into account – then, provided the area is not generally depressed, the seller can reasonably expect to find a buyer and conclude the sale quite quickly, e.g. within five months.²² However, because DLA's project delivery process often takes longer than this (despite semi-successful efforts to shorten it), DLA is not in a position to acquire these properties. DLA is more likely to acquire properties of farmers who cannot find another buyer. This may be either because the seller's asking price is too high to attract other buyers (meaning that the land is poor relative to the price), or because the market for land is badly depressed.

This latter point, while it cannot be quantified, probably represents one of the most significant ways in which the redistribution programme fails to take proper advantage of opportunities in the land market, or put differently, the normal functioning of the land market translates into serious limitations for redistribution. The question that we will address in due course is whether this is an inevitable consequence of the willing-buyer/willing-seller approach to redistribution, or whether it is a problem that can be minimised or avoided by re-engineering the manner in which the redistribution programme seeks to tap into the property market.

7. Conclusion: Promising and unpromising avenues for policy development and further exploration

The purpose of this concluding section is to examine a number of important policy issues in respect of improving the availability and affordability of land for redistribution. The list of issues covered does not attempt to be exhaustive, but rather to touch on some of the more promising avenues for further policy development, or by way of discouraging some of the less promising avenues that are nonetheless apt to distract policy-makers from what is feasible and worthwhile.

7.1 The importance of encouraging subdivision

In theory, one way more land could become available on the market for redistribution would be if large-scale commercial farmers sold off portions of their properties. In principle, even if

farmers were inclined to remain on their land, they could make some of it available to the market, or for land redistribution, by subdividing it off. Especially for those farmers who are struggling to service their debts, it might appear that selling off a portion of their property would be an efficacious way of trying to restore their financial standing. In addition to increasing the supply of land, this would have the important benefit of increasing the supply of *smaller properties*, i.e. that would more likely be suitable to emerging farmers.

In practice, however, this sort of partial selling happens rarely, and only in times of severe distress. Rather, one normally finds that farmers either want to sell all of a property, or none of it. In the first place, most farmers in South Africa utilise their land fully.²³ Therefore, a farmer who has decided to sell, would not see much purpose in selling the farm off in discrete parts, as the remainder may no longer be considered of an economical size, either to himself or to potential buyers. A worst-case scenario would be to sell off a portion of the farm, only to find that the rest is unsaleable.

Even when bankers encourage farmers to subdivide as a means of addressing a debt problem, farmers are reluctant to do so. In general, farmers' instincts are to sell a property in its entirety or not at all. In times of exceptional distress, however, applications for subdivision do increase. The Department of Agriculture, which administers the Subdivision of Agricultural Land Act 70 of 1970, indicates that over the past two years, applications for subdivision have increased sharply. Presently, it receives 300 applications per month from farmers who wish to subdivide, about three quarters of whom indicate that their main reason for wishing to do so is financial distress. Of these, about one sixth wish to subdivide their house from the rest of the property so that they can stay in the house and sell off the rest of the farm. Amongst the rest, most attempt to sell off around 50% of the farm, keeping the other 50% for themselves to continue farming.²⁴

Apart from this sort of financial distress, the situation in which subdivision may be attractive to a landowner, is where the sale of all the subdivisions would be more or less simultaneous. There are only two scenarios where this is plausible. The one, of course, is where the whole property is subdivided and transferred under the auspices of the land redistribution programme. The other is where the property has development potential, for example where the subdivided portions might attract those wishing to buy land for homes. Of course, this potential must be significant enough to be worth incurring the costs of getting permission for and then undertaking subdivision.²⁵



Despite these obstacles, the importance of encouraging subdivision cannot be exaggerated. The vast majority of redistribution projects, which do not involve subdivision, are in the 101 hectare to 500 hectare range. As is evident from Table 3 in Section 3, annual market transactions in properties 500 hectares or smaller comprise only 16% of total land transactions by area, and on average properties in the 101–500 hectare range cost 77% more per hectare than for the 501–1 000 hectare range.²⁶

Nonetheless, PDLAs are hesitant to get involved in projects that involve subdivision, both because of the costs involved and because of the uncertainty as to the delays and complications that might be involved. Encouraging subdivision to better accommodate the needs of land redistribution will probably require a clear policy and concerted intervention by government. In particular, transaction costs associated with subdivision must be reduced, and to a greater extent borne or shared by government, above and beyond the redistribution grants. Moreover, commercial farmers should be sensitised to subdivision for redistribution as a viable opportunity to contribute to land reform as well as to improve their own financial standing.

7.2 Should beneficiaries pay something other than the market value for land?

One of Riedinger's points against the willing-buyer/willing-seller approach is that market value typically exceeds productive value by a large margin, thus making the willing-buyer/willing-seller approach more expensive than, say, the compulsory acquisition approach which typically relies on productive value. The fact that market value tends to exceed productive value in most areas of South Africa is well-established (see Van Schalkwyk & Van Zyl 1996).

The National Land Committee and other stakeholders have expressed similar sentiments for the case of South Africa. In a slight variation, in June 2000 Minister Didiza effectively told the National Council of Provinces that if government were to fulfil its land reform objectives it would have to 'induce' white farmers to sell their land, and to sell it in terms of 'equitable compensation' rather than at market value.²⁷

Strictly speaking, such a proposal can be interpreted in two ways. First, it can be construed to mean that owners should be compelled to sell at productive value (or in terms of 'equitable compensation'), meaning that they would be expropriated with compensation set at that value, or encouraged through threats

of expropriation to do so. Second, it could mean that the government would adopt a policy whereby it only approves the release of grants for land purchase where it so happens that the owner's selling price coincides with, or is less than, the property's estimated productive value. We treat each of these possible interpretations in turn, as a means of evaluating how practical it might be to alter policy to focus on productive value or 'equitable compensation value' rather than market value. We do not however seek to evaluate the proposition on moral grounds, i.e. to determine on what basis landowners 'should' be paid.

In terms of expropriation, the Constitution lays out general principles governing the amount of compensation that should be paid over to the expropriatee. Section 25(3) of the Constitution reads in full:

The amount of compensation and the time and manner of payment must be just and equitable, reflecting an equitable balance between the public interest and the interests of those affected, having regard to all relevant circumstances, including –

- (a) the current use of the property;*
- (b) the history of the acquisition and use of the property;*
- (c) the market value of the property;*
- (d) the extent of direct state investment and subsidy in the acquisition and beneficial capital improvement of the property; and*
- (e) the purpose of the expropriation.*

While the language of the Constitution does not convey any sense of prioritisation among these 'relevant circumstances', nor any sense of what in practice 'an equitable balance between the public interest and the interests of those affected' should imply, certain Land Claims Court judgements have come to constitute interpretative guidelines. First and foremost, according to the Land Claims Court, valuation of land expropriated by the state in pursuance of land reform must be seen as a two-stage process. In the first stage, the valuer is required to assess the market value of the land in accordance with established valuation principles, i.e. principles of assessment derived from court cases decided under the Expropriation Act 63 of 1975 and its predecessors, and also foreign precedents where applicable. In the second stage, the valuer is required to adjust the market value estimate according to the impact of the other factors listed in Section 25(3).

What this means is that productive value, as such, does not enter as a separate consideration – unless factor (a) would be interpreted as such, which seems unlikely. However, one might



argue that consideration of some of the other factors of Section 25(3) might have the effect of reducing compensation, and thus effectively ‘closing the gap’ between market and productive value. Seemingly, the only other factor that might appreciably reduce the compensation to the expropriatee is factor (d), which pertains to capital subsidies received from the state by the *present* owner. The types of subsidies that are implied are of three kinds: under-payment for the property upon initial acquisition; subsidised interest rates, meaning primarily long-term loans from the Agricultural Credit Board;²⁸ and infrastructure subsidies. At present, there has not been sufficient accumulation of experience to suggest how great a difference consideration of factor (d) makes to the overall compensation offered to the expropriatee. What one can venture is that the scope of these subsidies in the past was such that, in terms of the present generation of commercial landowners, consideration of them will not likely have a major impact on the theoretical gross compensation to expropriatees, and thus would not simulate a ‘closing of the gap’ between market value and productive value. However, to establish this beyond a doubt would entail a study in itself.

Turning now to the idea that government could adopt a policy of only purchasing land when its asking price is commensurate with its productive value, this raises a number of interesting issues. The first point to note is that such a policy, in itself, would not have an effect on the land market, for the simple reason that government does not have anything close to a monopsony in the land market, and thus cannot influence general price levels in this way, except perhaps in a handful of localities. The second point is that, to the extent some owners are willing to part with their land at some value deemed by government to equate to those properties’ productive value, this simply means that in those instances market value and productive value coincide, or that productive value is even higher.

The third point, however, is absolutely critical. Much of the public debate about productive versus market value appears to be premised on the belief that productive value can be derived precisely and scientifically, whereas the determination of market value is something rather more arbitrary and messy. In fact, the opposite is closer to the truth. There is indeed much in the determination of market value that is subjective, imprecise and open to abuse, but such is even more the case with productive value. A true estimate of a property’s productive value subsumes predictions as to input and output prices, weather

shocks and trends, changing taxation regimes, interest rates, the exchange rate, technological changes, etc. into the infinite future. This is an extremely tall order, and very sensitive to one's choice of assumptions. Most notably, one's estimate of productive value is influenced hugely by the choice of 'capitalisation rate'. A 'capitalisation rate', or 'discount rate', is the denominator of the standard fraction used to determine the value of a perpetuity. For a simple example, if a given property can yield a net profit of R100 000 per year and this is assumed to remain constant in real terms forever, then $100\,000/r$ is the productive value of that property, where 'r' is the capitalisation rate. The future stream of income is said to 'be capitalised into' the value of the land at a single point of time, i.e. the present. However, what 'r' should be is the subject of endless debate among economists, valuers and project managers, and is adjusted up or down according to rather subjective assessments of risk and alternative opportunities.²⁹ Banks typically use very high – meaning conservative – capitalisation rates, such as 20%.³⁰ Many business plans submitted for land redistribution projects by service providers in the past five years, however, used capitalisation rates of 5% or 10%.³¹ Note that for a capitalisation rate of 20%, a property promising an annual net profit of R100 000 would be construed to have a productive value of R500 000, but at a capitalisation rate of 5%, the same property would be reckoned to have a productive value of R2 million, or four times as much. Government could dictate that for purposes of valuing properties for redistribution, a particular capitalisation rate be used, but any such choice would be rather arbitrary, and still not address other difficulties that attend the estimation of productive value. While the estimation of market value may also have its pitfalls (the most serious of which is absence or poor selection of comparable sales), it at least avoids some of the main hazards of trying to determine productive value.

In summary, the call to use productive value or 'equitable compensation value' rather than market value as a basis for paying owners for their properties, does not have much promise. If one pursues the expropriation route, then the property clause of the Constitution would apply. Short of compelling the Land Claims Court to alter its interpretation of the property clause, or of amending the Constitution to change the property clause itself, there appears to be little hope or legal basis of offering only productive value to expropriatees. Apart from this, productive value is a rather malleable construct that does not necessarily advance government's ability to arrive objectively at



valuation estimates. To the extent that some owners would be willing to part with their land at a price deemed to be equivalent to the land's productive value, this merely suggests that productive value and market value in these instances happen to coincide.

7.3 The question of 'supply-led land redistribution'

Since as long ago as 1998, the Department of Land Affairs has been groping to establish some sort of policy on so-called 'supply-led land redistribution'. By supply-led redistribution is meant an initiative in which land is secured for the purposes of redistribution before specific applicants have indicated their wish to acquire it. This is in contrast to demand-led interventions, in which beneficiaries either identify land at some point in the course of the project cycle, or approach the PDLA already having identified land in the first place. Strictly speaking, municipal commonages are supply-led projects, as are some state land disposal projects. However, here we focus specifically on supply-led initiatives that involve the acquisition of private land for transfer to specific individuals or groups.

The rationale for contemplating supply-led redistribution initiatives is threefold. Broadly speaking, there is a common belief that, first, supply-led initiatives could significantly accelerate the redistribution of land, and second, they could enable the land to be acquired more inexpensively. In addition, there is a third belief that supply-led initiatives would be able to ensure the acquisition of high quality land, whereas demand-led projects simply end up with the land that sellers wish to sell, or cannot react quickly enough to opportunities to buy high quality land.

Notwithstanding these possible advantages, significant concerns have been raised about government's ability to successfully pursue supply-led projects. The main worry is that government may find itself in situations where, having acquired land deemed suitable for redistribution, it then fails or struggles to dispose of it again. The fear is that the same difficulty government seems to experience in disposing of agricultural land already in its possession (e.g. ex-SADT land) may also obtain in the context of supply-led projects. A related fear is that, during the interim period (i.e. between purchase and re-sale), government will be saddled with the burden of holding that land. The case of the Bapsfontein project in Gauteng is one example of these risks. The farm was acquired in 1999 with a view to subdividing it and allocating the portions to emerging commercial farmers. Despite the full involvement of both the

PDLA and the provincial agriculture department in the initial scoping and planning, the transfer of the land to beneficiaries has not yet taken place. Moreover, even though the land was in the meantime leased out to a neighbouring farmer, the buildings on the property have been completely stripped and vandalised. A second supply-led project in Gauteng has fortunately not suffered the same fate, but still the government is some ways away from identifying beneficiaries and transferring the land, notwithstanding the fact that the property was purchased more than 15 months ago. A would-be supply-led project in North West, initiated by the provincial department of agriculture there, was abandoned before the government took possession, out of concern for the department's ability to see the project through in a timely fashion.

The government is rightly concerned about the risky implications of embarking on supply-led redistribution. However, there is one important instance where the supply-led approach might be the ideal solution, and where risks could be tolerably low. Specifically, if government is serious about 'decongesting over-crowded former homeland areas', which is one of the stated objectives of the new LRAD programme, then it might seek to augment communal areas by means of effecting proactive purchases of large, contiguous blocks of commercial farmland adjacent to existing communal areas. The delicate aspect of such an initiative would be ensuring that the new land administration and landholding arrangements were effected fairly. The point being made here, however, is to emphasise the fact that the willing buyer/willing seller approach to redistribution, *does not* have to be interpreted as meaning one single property transaction at a time. In all likelihood, by virtue of this land's existing location combined with a strategic buying programme, the land could be acquired quickly, inexpensively and copiously.

7.4 Overview of policy recommendations

This report has attempted to clarify what are, and are not, the limitations of the willing-buyer/willing-seller approach to land redistribution. In order to do this, the paper has examined a number of areas: the extent of activity in the rural land market owing to redistribution; the effect of the redistribution programme on the land market, particularly in terms of land prices; the manner in which redistribution projects interact with the land market; and sundry policy issues bearing on improving access to land for redistribution. We conclude by listing a number of policy recommendations that follow from the considerations raised in the paper.



(1) *The typical project cycle has to be more accommodating to 'shopping around'.*

To some extent, this would appear to be well catered for in the newly revised redistribution programme, which seeks to abbreviate the project cycle and to empower applicants by relying on them to do more of the initial footwork themselves. However, there is still reason to worry that presumably applicant-driven projects will be based on pieces of land that have been proposed by sellers, or that, lacking negotiation skills, applicants will be quick to focus on the first or second property they become aware of. Moreover, notwithstanding the new 'streamlined' project cycle, there is still reason to be concerned that the time lag between project planning and project approval will be long, and thus exacerbate the extent to which the project's success hinges upon a particular property.

One way this could be approached is to require that applicants' project proposals reflect on the relative merits of two or three different properties, and explain why one of these was chosen over the others. In other words, shopping around could be turned into a requirement (similar to requiring three quotes from potential service providers), and would-be sellers could thus be made aware that they are competing for redistribution applicants.

(2) *Land identification should be postponed until later in the project cycle.*

It is well and good to suggest that the project cycle be abbreviated, but in the event this does not happen to the extent hoped for, then one measure that could be adopted would be to postpone land identification until later in the project cycle. This would effectively mean that the lapse in time between engaging with a landowner and having final approval with which to proceed to conveyancing, would be briefer, allowing applicants to seize opportunities more readily. The premise of this idea is that, in the past, beneficiaries have not been well served by the highly technical land-specific planning that was undertaken. An alternative to this approach would be to 'pre-approve' applicants in terms of a generic business plan, and then require them to find land appropriate to that plan, within the stipulated budget, with final approval being subject to a modest amount of additional work relevant to that parcel. This is part and parcel of the idea that government must stop coddling applicants, and rather must allow them to make more decisions of their own accord. This proposal could easily be combined with the previous recommendation. Of course, this proposal would not be appropriate for projects involving settlement.

(3) Land should be identified through numerous different means.

The main point to be made here is that neither applicants nor government acting on behalf of applicants, should limit themselves to formal advertisements or estate agents' listings when trying to identify properties for possible acquisition. Neither is it sufficient to set up a database where landowners are invited to indicate their interest in selling, though this is not to be discouraged. The reality is that many more property owners are willing to sell their land than formal advertisements and listings would indicate. This relates as well to point (6) below.

(4) When collusion is suspected, numerous approaches can be followed.

Collusion may be the result of outright, rigid racism, and as such may not be amenable to a reasonable, rational approach. In these instances, government may have to avail itself of expropriation. However, in other instances, and potentially the majority of such cases, the root of the collusion may be mistrust and ignorance, which can potentially be dispelled through direct dialogue or the intervention of mutually trusted intermediaries. Neighbours' fear of 'uncontrolled settlement' in particular can be dispelled through communication. Standing stakeholders' fora and some farmers' unions could also serve as vehicles for getting these messages across.

(5) Government must think more strategically about where to promote redistribution.

The primary determinant of where redistribution should happen is presumably where the need is expressed in conjunction with that district's or province's spatial development plan. However, regard should also be had to where land can be acquired relatively easily. Given what has been established above about the reasons for which owners are interested in selling, it should not be difficult to identify those areas in which owners' proclivity to sell is especially great. Areas in which a large number of farmers are in difficulty, and areas adjacent to former homelands and informal settlements tend to be especially promising areas in which to 'shop' for land. It is important at this point to reiterate that the fact that a high proportion of farmers in an area are struggling does not mean that their land is inferior or that newcomers are destined to struggle in exactly the same manner. This sort of pro-active scoping is, of course, especially important in the context of supply-led initiatives.



(6) Opportunities exist to acquire land in large blocks at good prices.

It is beyond the scope of this report to make specific proposals about supply-led initiatives, but it is important to note that certain aspects of this report offer reason for optimism that supply-led initiatives could be very successful. In particular, the sensitivity of landowners to changes in the ownership pattern in their immediate environment suggests that a co-ordinated buying effort in a given area (e.g. a dozen or so contiguous properties) could move very quickly. This does not have to be approached destructively or wantonly, but rather in a manner that is mutually satisfactory to farmers wishing to leave the sector or relocate, and applicants seeking land. The best opportunities for this sort of approach are very likely in immediate proximity to former homeland areas, where the extent of overcrowding is particularly great.

(7) Landowners should be encouraged to subdivide portions of their land.

Government is frequently approached by landowners who would like to help establish former farm workers or others on their own piece of land. The motivation may be varied, from genuine kindness, to concerns over ESTA, to their own financial problems. In many cases, regardless of the owner's motivation, meaningful opportunities present themselves, which government is not well placed to accommodate. First, owners are familiar with the onerous requirements of the Subdivision of Agricultural Land Act, but may not be aware that under certain circumstances these can be avoided. Second, owners may be concerned about the cash costs associated with subdivision, apart from which they would be quite happy to subdivide. Third, many landowners are generally not familiar with how they can play a role in the land redistribution programme. What this suggests is that, especially with the newly revised redistribution programme, much could be gained by providing landowners with concise information that they could use to the benefit of redistribution.

(8) Government must restore its credibility as a land buyer or land financier.

If the government chooses to pursue the willing-buyer/willing-seller approach, then it must restore its credibility as a land buyer or agent for land buyers. This means above all that it must try to streamline its policies and procedures such that the average would-be seller (as opposed to the more desperate would-be seller) does not perceive it to be such a serious

disadvantage to engage in selling negotiations with redistribution applicants or with government on behalf of redistribution applicants. In other words, government and redistribution applicants have to understand how normal market transactions in land typically take place, and especially the time frame according to which transactions are expected to be completed. Another implication is that, to the extent that the government may also simultaneously need to carry a big stick – i.e. to threaten expropriation – it must do so intelligently, meaning that all stakeholders must share a clear understanding about the circumstances in which government may decide to use expropriation, and why.

Endnotes

1. Jeffrey Riedinger, Wan-Ying Yang & Karen Brook 2000. Market-based land reform: An imperfect solution.
2. Preliminary Report on the Review of the Settlement/Land Acquisition Grant – Work in Progress, December 1999, p.8.
3. Lahiff argues persuasively that the Minister's blaming landowners is mere 'rhetoric' aimed at 'placating domestic critics' (*op cit.* p.8).
4. The data for the tables in this section are derived from the Department of Land Affairs' *Land Price Data Base*, which is available to the public on the DLA's website. These data are based on transactions data recorded by the Registrar of Deeds.
5. This should not be taken to mean 46% of the redistributed land (in hectares) or 46% of the beneficiary households occurred in these few districts; chances are, the typical projects in those districts with abnormally high numbers of projects have been smaller than the average.
6. This section builds on results previously presented by R Mokoena and M Aliber, in 'An econometric analysis of the effects of the land redistribution programme on land prices in South Africa', at the June 2001 conference of the Agricultural Economics Association of South Africa.
7. DLA Position Paper on a Rural Property Tax, Directorate: Redistribution Policy and Systems, June 1999, p.26.
8. H van Zyl, personal communication, 2000, Bloemfontein.
9. One variable that has not been included is a trend variable, i.e. 1, 2, 3, etc. Although it would have been natural to have included such a variable to pick up otherwise unaccounted



- for effects over time, this was not possible because the ‘between estimator’ (see below), which forms an integral part of the estimation procedure, is not feasible where a trend variable is included.
10. Municipal commonage projects aim to improve people’s access to municipal land primarily for grazing purposes. Thus, in contrast to ‘regular’ redistribution projects, it does not involve a transfer of land to beneficiaries, though usually DLA assists the municipality to acquire more land for commonage purposes. For the period 1995 through 1999, 29% of the land acquired by DLA was by means of commonage projects.
 11. The fixed effects model can be expressed as:

$$Y_{it} = \alpha_i + \beta_1 X1_{it} + \beta_2 X2_{it} + \varepsilon_{it}.$$
 12. The random effects model can be expressed as:

$$Y_{it} = \alpha + \beta_1 X1_{it} + \beta_2 X2_{it} + \varepsilon_{it} + \mu_i.$$
 13. The Breusch-Pagan Lagrange multiplier test can be used to test for the presence of random effects, and thus assist in deciding whether one is justified in using the random effects rather than fixed effects model. This was done for some of the models described, with significant results. Nonetheless, the decision whether to use the one or the other approach is not strictly a statistical issue, but one of interpretation.
 14. The between estimator relates to the following model:

$$\bar{Y}_i = \alpha + \beta_1 \bar{X}1_i + \beta_2 \bar{X}2_i + \mu_i.$$
 15. The expression ‘is associated with’ as used here is deliberate. It is meant to convey that, strictly speaking, and notwithstanding the use of the words ‘increase’ and ‘decrease’, the statistical tests conducted here are not tests of causality.
 16. PDLA staff are full of stories of landowners who, not having a ‘sufficient’ number of farm workers, in fact go out to recruit additional grant applicants.
 17. Admittedly, this is not the most rigorous method for assessing this issue, not least because PDLA staff might naturally be disinclined to admit that owners were over-paid for their land. A more robust treatment of the issue of whether DLA tends to pay too much for land (in this more narrow sense) would involve having a professional valuer perform review appraisals on a random sample of projects, and then comparing these to what was actually paid.
 18. While in principle conservative on account of their attention to productive value rather than market value, in fact, cases have been observed of Land Bank valuations being higher than estimated market value.
 19. PDLA staff often do not reveal the valuation price to the

- seller, only that a valuation has been done. This means that the seller is not aware how much the government would actually be willing to pay.
20. Among those farmers who find themselves in acute financial distress, the proximate factor is almost always an inability to continue loan servicing. In other words, being heavily indebted makes farmers more vulnerable to short-term adversities, such as low farm-gate prices or poor yields. In aggregate, the real debt of farmers has declined steadily from its peak, in 1985, until 1996, at which point it started rising again. Many of those farmers who find themselves over-indebted today are those who took out long-term loans in the 1970s and 1980s (when interest rates were negative in real terms) in order to purchase more land or equipment, thus they were not necessarily among the weaker farmers or those on worse land.
 21. By contrast, over this same period, the total amount of commercial farmland declined by only 5.4%, from 86.9 to 82.2 million hectares.
 22. According to interviews with estate agents who deal in rural properties, provided there are buyers in the market, a seller who decides to sell his/her land can expect to sell the property within two or three months, six months at the outside. Those farmers who hold out for higher prices, however, may wait much longer, either until the market changes, until they are lucky or until they choose to lower their price.
 23. When markets are poor and input costs are high – a situation that presently characterises most grain-producing and mixed farming areas of the country, among others – farmers may shift more marginal lands to natural grazing, but in the expectation of planting it in the future when it is once more economical to do so.
 24. Personal communication, Mr Thys Botha, National Department of Agriculture.
 25. Over the years, a fair amount of farmland in the vicinity of cities was subdivided into plots or smallholdings. These were developed as a mix of rural residences and hobby farms. However, the market for these plots has deteriorated dramatically over the past several years, not least because of residents' security concerns. As a result, there is little incentive to create additional plots through new subdivisions.
 26. These comparisons should properly be made at the provincial level, in which case the disparities would likely be



- somewhat less dramatic. Even here, however, the fundamental point remains intact.
27. *Business Day*, 21 June 2000, 'Govt will buy farms for land reform'.
 28. Although Land Bank interest rates have also historically been below rates offered on agricultural loans from commercial banks, an in-principle agreement has been struck whereby the implicit subsidy on Land Bank loans would not be counted as an interest rate subsidy for purposes of adjusting compensation.
 29. For a detailed discussion, see, for example Barlowe (1986:274–278).
 30. This is the capitalisation rate used by ABSA Bank to determine productive value for proposed redistribution projects in Mpumalanga. Banks' estimate of productive value is thus geared to help them conservatively assess the repayment ability of the property. This practice among banks may be responsible for the enduring impression that productive value tends to be below market value.
 31. In this context, the purpose of using discount rates was mainly to demonstrate the economic benefit-cost relationship of the project, rather than evaluating the productive value of the property. However, the principle is precisely the same.

8. References

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