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Willingness to Pay: Slave Prices in the 18th Century Cape Colony

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Background and approach



- Was slavery an economically viable endeavour?
 - Strongly debated in the USA
 - Engerman & Fogel (1974), *"Time on the Cross"*
- VS**
- Gutman (1975), *"Slavery and the Numbers Game"*
-
- Was the picture similar in other parts of the world?
 - Was it "dead money" at the Cape?
 - Investigate whether slave prices matched the value of their marginal product
 - Develop a Hedonic model



Background



- de Chavonnes, Governor of the Cape in 1717
 - During policy debate remarked that slavery would inhibit economic development since *“the money spent on slavery is dead money”*
- Janssens, Governor of the Cape in 1804
 - *“the whole industry of this country is based on the existence of slaves... Those who possess many slaves can easily be recognised by the condition of their farms; everything looks better and more prosperous than with those who have to work with scanty means”*



Background



- 1658 first significant numbers were imported in two shiploads (one 228 and the other 174)
- Later the Company's administration became concerned with the large amounts of capital which colonists had tied up in slaves (1770-1800)
 - Slaves formed major part in capital investment of farmer
 - Guelke (1974) estimates 13-17% of value of total estates of arable farmers in the period 1731-80
 - Increase to about 20% in last two decades of century
- 1834 finally abolished



HEDONIC PRICES OF SLAVES



Approach



- Pooled cross sectional data with time dummies to trace price fluctuations
- Hedonic price function to account for changing slave characteristics in the evolution of prices
- Convert prices to “real prices” to eliminate “general inflation” not specific to slaves
- Compare prices to productivity
 - Construct a model of wine production, with each labour type as explanatory factors – and controlling for other production

$$\text{Price} = E\left(NPV_{\text{slave productivity over lifetime}}\right) = VMP_{\text{current}} + E\left(NPV_{\text{returns on characteristics over lifetime}}\right)$$



Evidence on Slave Prices - Gender



- Male premium (*Kotlikoff, 1979; Friginals, Klein & Engerman, 1983; Chenny, St-Amour & Vencatachellum, 2003; Levendis, 2007*)
 - Physical strength required in slave occupations
 - Male slaves were preferred to female for the heavy duty labour on the farms and porters in Cape Town
- Some studies find female premium (*Friginals, et al. 1983*)
 - Household occupations
 - Supply side: in Americas fewer female slaves sourced from Africa since higher demand for female slaves in Africa
 - *'Breeding potential'?*
 - NPV not only of current slave, but of offspring
 - Shell (2009): slaves in the Cape Colony were valued for their skills and not the ability to reproduce
 - Higher mortality than fertility at the Cape



Evidence on Slave Prices - Gender and Age



- Only *prime-age* males slaves received higher price than female counterparts (*Fraginals, et al. 1983*)
 - Physical strength required in slave occupations (field work)
- Concave relation between age and price (*Chenny et al. 2003*)
 - Trade-off between NPV of slave productivity and current lack of productivity of youth
 - At the Cape: Those who were old, 'worn-out, blind or dangerous were sold for less than the median



Evidence on Slave Prices – Location of origin



- Native slaves sold at a premium (*Chenny, et al., Friginals, et al.*)
 - Different disease environments, additional risk when importing slaves
 - Life expectancy lower in the cases of non-native slaves
 - Different agricultural productivities
 - Transportation costs – slaves from further away imply trader selects higher quality slaves to offset higher transaction costs



Evidence on Slave Prices – Ethnic factors



- Ethnic origin
 - Physique of slaves
 - *Chenny, et al.* report that Indian slaves were smaller than Creoles – less likely to do plantation work
 - Price premium of creole w.r.t. African slaves
- Correlated with region of origin?



CAPE CONTEXT



Sources of slaves



1. Foreign traders
 2. Purchase from individuals on VOC ships travelling from Batavia to the Netherlands
 3. VOC-sponsored voyages from the Cape visited slave outlets in Madagascar and later on in Mozambique
 - Most of these slaves were destined for use by the Company itself
-
- Discretionary sales often occurred shortly after the slaves arrived in the colony
 - Most common were cash sales



Productivity



- During early 18th century there developed a close correlation between the number of adult male slaves owned and the output of arable farms
 - Large farms covered slave costs best and used them most profitably
- Although there were fluctuations, the farmers producing both wine and grain had the closest correlations, hence more efficient exploitation of slaves throughout the year
- This changes after 1740's with increasing use of other labour, especially Khoi



DATA



Data Sources



- Slave prices and characteristics
 - *Changing Hands* (Robert Shell) slave transfer sale deeds
 - 1658-1768
- General price levels
 - Du Plessis & Du Plessis (2009)
 - From 1700 onwards
- Productivity
 - *Opgaafrollen* (Hans Heese)
 - 1663-1773
- Product Prices
 - Auction Rolls



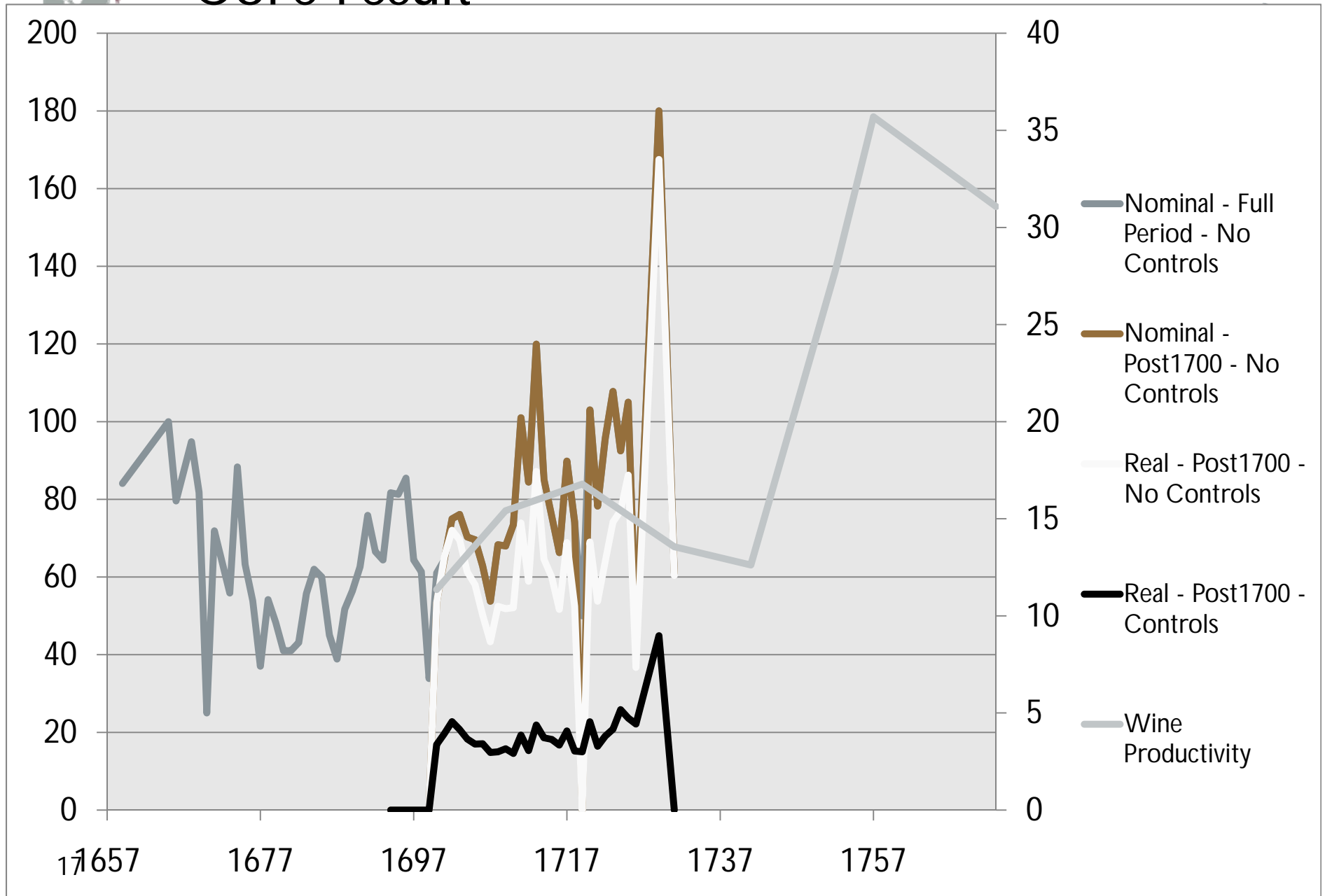
Data issues



- Can mostly only use post-1700 sample as a result of overlap in various sources
- Clearly some “batch sales” of slaves, not based on characteristics or qualities
 - For these sales, most characteristics are not included in the data
 - Controlling for these eliminates this issue
 - But reduces sample size substantially
- Productivity from *opgaafrollen*
 - In farm commodities => exclude those who did not produce any of these goods
 - Tobit model of wine production
 - Many zeroes



Core result

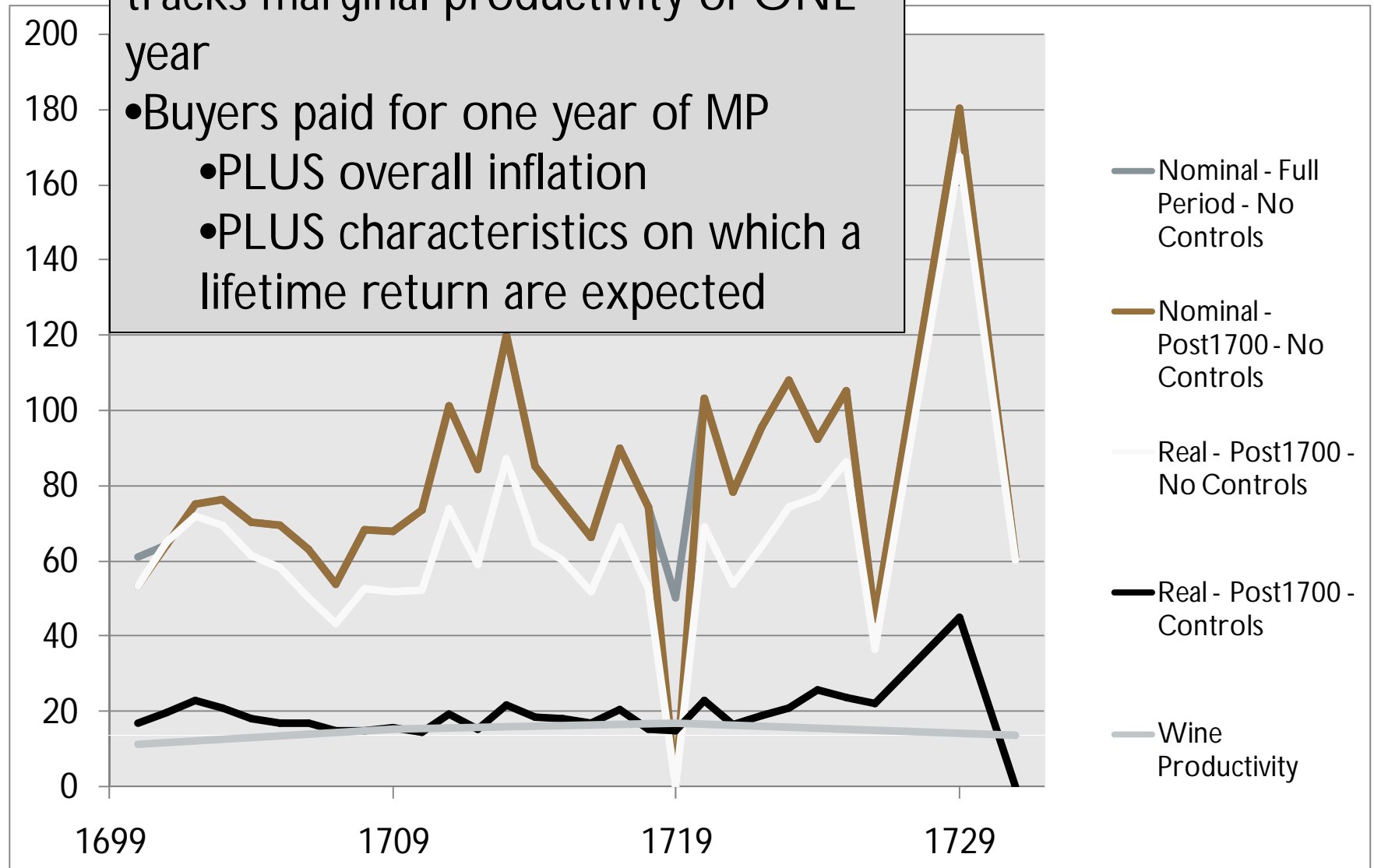




Core result



- Controlled Price series very closely tracks marginal productivity of ONE year
- Buyers paid for one year of MP
 - PLUS overall inflation
 - PLUS characteristics on which a lifetime return are expected





Hedonic Prices

		Real – Post 1700
	Male	-0.018
	Age	0.076***
	Male x Age	0.012
	Age^2	-0.001***
	Male x Age^2	0.000
Origin (reference: East Africa)	Indi_Arc	0.129
	Indian_S	0.11
	Mada&Mau	0.001
	S_African	-0.03
	West_Afr	0.269

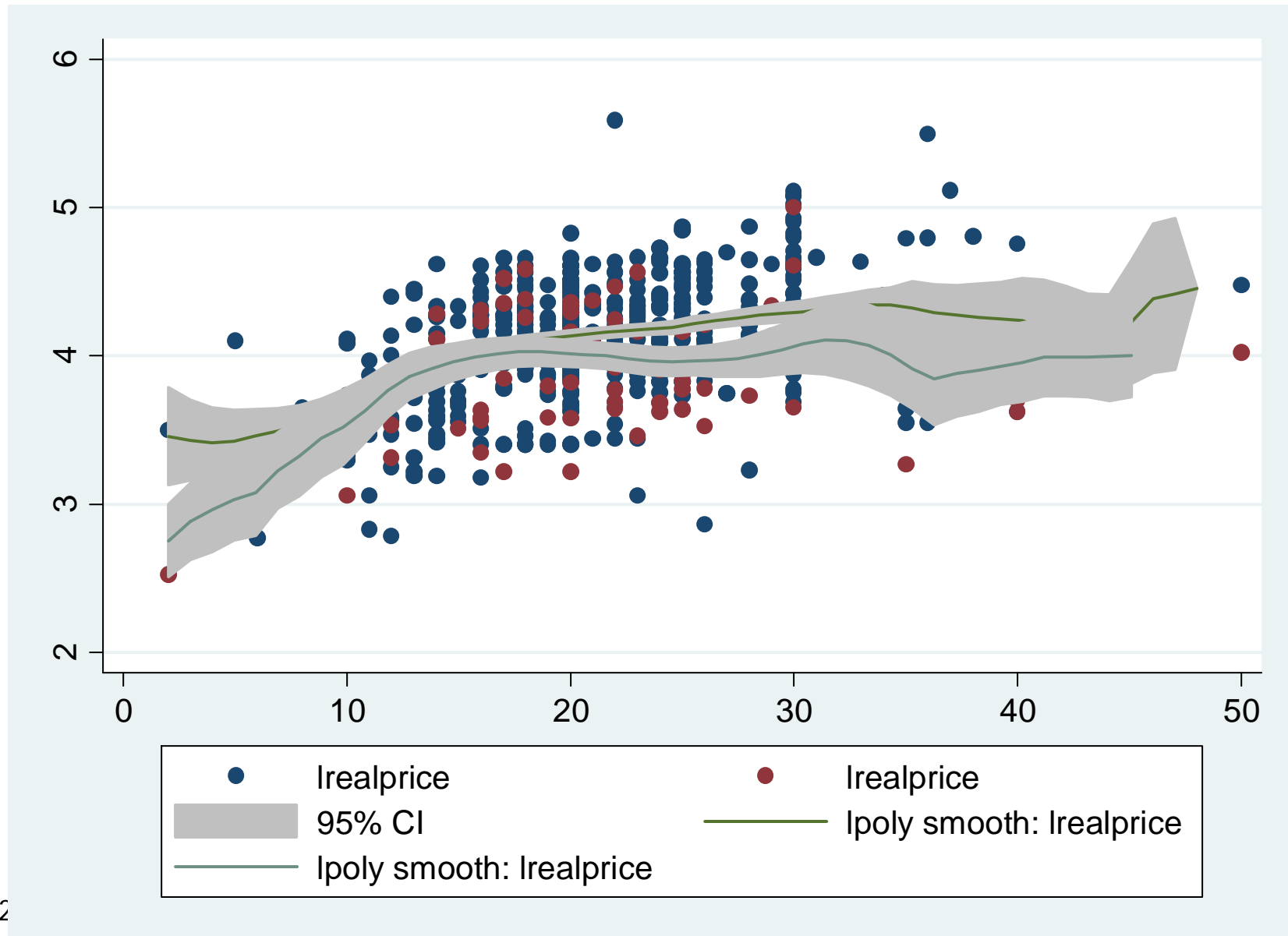
- Age concavity
- This specification does not reveal male premium
- Origin not significant, but magnitudes look correct, except W Africa – first slaves at Cape
- Seller location of great importance – evidence of resale close to CTN

Seller Location: (reference: Batavia)	Cape district	0.180**
	Drakenstein	0.235**
	Hottentots Holland	0.632***
	Liesbeeck valley	-0.407***
	Stellenbosch district	0.206**
	Table valley	0.08
	Transit-at sea	-0.03
Buyer civil Status: (reference: Councillor)	Justice	0.062
	Magistrate	0.012
	Monsieur	0.259*
	VOC employee	-0.122**
	burgher	0.029
	exile	
	free Maccassar	
	freeblack	-0.035
	time-expired convict	0.18
	Constant	3.788***
N	646	
P(Chi2>c)	646	
R-squared	0.462	



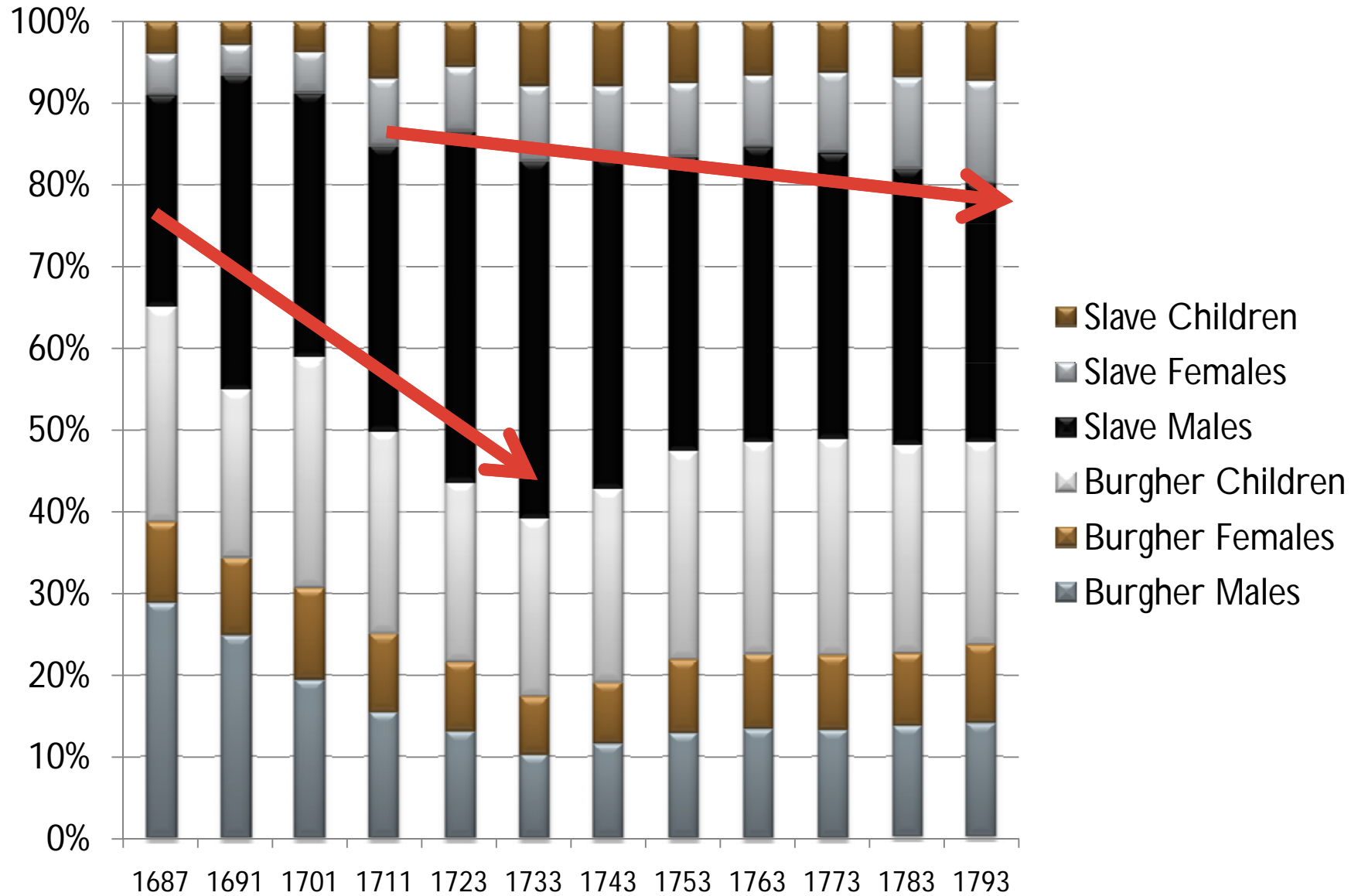


Age and Gender



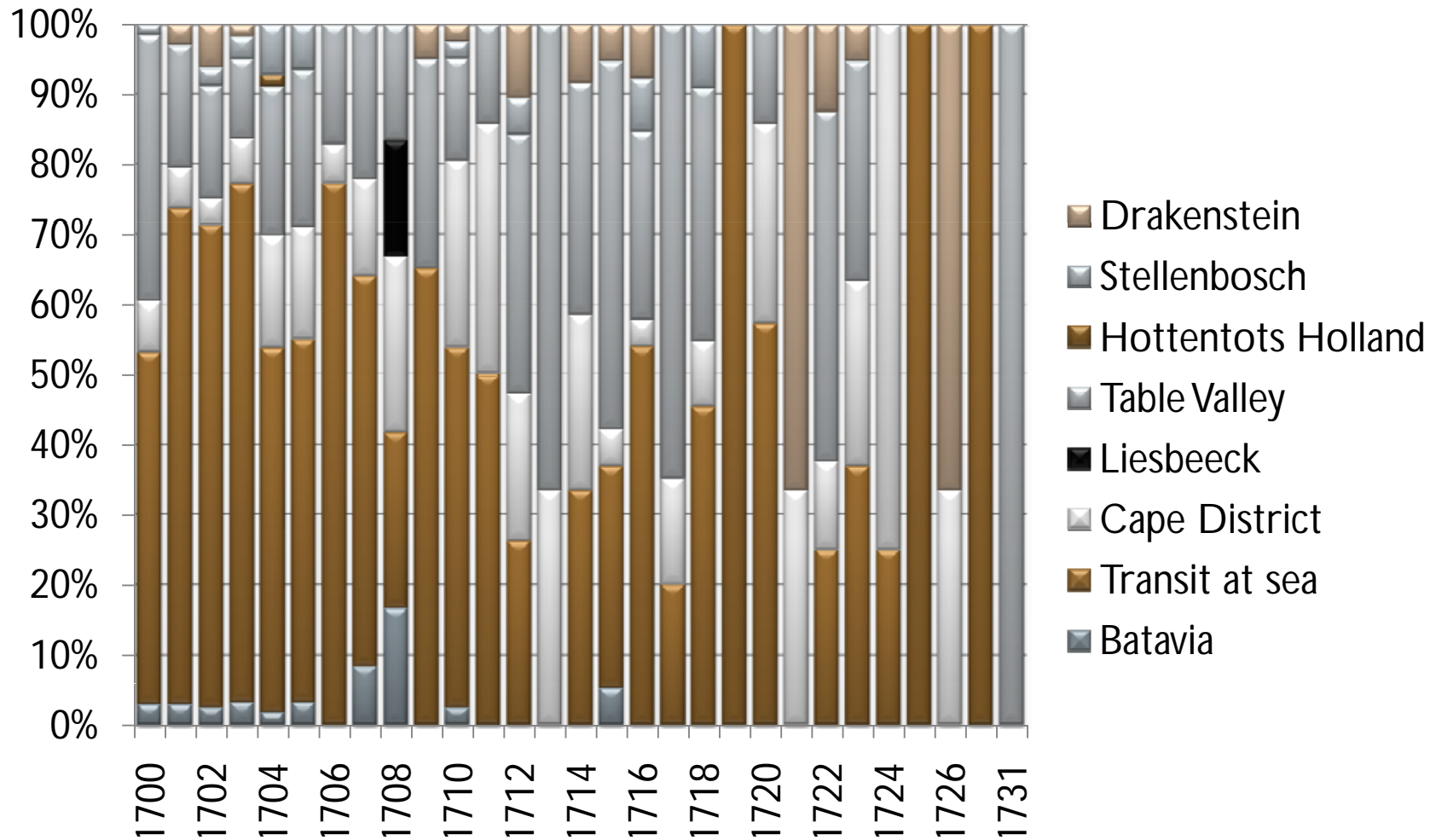


Population Composition *Worden (1985: 53)*





Changing Source of Slaves





Conclusions



- Slave prices rose in nominal terms from early 1700s
 - Shift from European immigration to slave labour
 - Demand side
 - Smallpox of 1713
- Not as pronounced when controlling for hedonic features and overall inflation
 - Progressively more local sales
 - Age and gender structure



Conclusions



- Profitability?
 - Buyers paid for one year of productivity and expected returns to characteristics over slaves' lifetime
 - Anecdotes suggested that slavery increased productivity in wine and wheat
 - However – and this is just a prompt for taking this paper further
 - Annual living cost of a slave was about 16 rixdollar
 - Productivity did not exceed this by much
 - Hence paying the premium for expected lifetime returns “upfront” may not have been a profitable decision