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Essays on Argentina's growth cycle and the world economy

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Introduction

This thesis basically consists of four chapters, written at different times over a quarter of a century. The first discusses the oil shocks of 1973-4 and 1979-80 to the industrialised world, events that contributed to the rapid growth of international capital markets¹. Argentina became one of the early and heavy borrowers on these markets which enabled it to postpone the adjustments that its endogenous growth cycle (discussed in the fourth chapter) would otherwise have enforced. The original contribution of this first chapter (when it was published) was the argument that the degree of monopoly protected the industrialised countries from a recession that under more competitive conditions would have been more severe. The idea that the degree of monopoly protects profits and real wages in the industrialised countries vis-à-vis the rest of the world had long been discussed in the development economics literature (e.g. Prebisch 1950) and by the unequal exchange writers (e.g. Braun 1973). In this chapter that idea was applied to the analysis of the way in which after the oil shocks the industrialised economies recovered their external balance and passed on part of the recessive adjustment to the non-oil developing countries and, eventually, also to the oil-exporters.

Argentina experienced two large foreign debt defaults after the oil shocks. This experience was the motivation for the second chapter, which discusses theoretically the price and quantity adjustments to a foreign debt overhang in a semi-industrialised economy. The model in chapter 2 is of the ‘gap’ type (e.g. Taylor 1994 and 2004) applied to prices and quantities. Thus, one part of the economy is kept on hold (prices) to discuss the rest (quantities) and vice-versa. The third chapter estimates the demand for imports function of Argentina that is of central importance in determining the country’s growth cycle. This is the main empirical contribution of the thesis. Previous estimates of Argentina’s import demand elasticities can be found in Diaz Alejandro (1970), Cline (1989) and Heymann & Ramos (2003). However, until very recently, the estimation of these elasticities suffered from a number of econometric problems such as dynamic specification, parameter stability, and links between short-run adjustment and long-run equilibrium (see Catao & Falcetti 2002). Chapter 3 attempts to overcome these problems. It provides new estimates

¹ For a comprehensive discussion of international capital markets growth see Scholtens (1994)

of the demand for imports in Argentina in the period 1970:1 – 2005:4. It applies recent developments in dynamic modelling and estimates the long-run income and exchange rate elasticities of the demand for imports in Argentina along with short-run linear and non-linear speeds of adjustment.

The thesis's main theoretical contribution is in chapter 4. The main argument of this chapter can be summarised as follows. Argentina's land abundance and fertility generate two remarkably different equilibrium exchange rates, one appropriate for agriculture and one for industry. This duality, and the dramatic fluctuations in actual exchange rates that it has produced, generates high uncertainty in the minds of economic actors about the future values of key economic variables. This uncertainty both depresses the exchange rate elasticity of supply of exports and also causes output to diverge from equilibrium through the multiplier-accelerator. This output disequilibrium is amplified in the trade account by the high income elasticity of demand for imports that undersupplies and oversupplies dollars in expansions and recessions respectively. The start and the end of the currency depreciation set the floor and the ceiling to the output cycle. Thus, such elasticities both destabilise the trade account near the equilibrium and limit output divergences far from equilibrium. The cyclical depreciation along with wage goods exports, generate conflict over income distribution and strain institutions decelerating the growth trend below its equilibrium path. The government can postpone recessions with fiscal deficits financed with foreign debt but this further depresses the trend. The balance of payments determined equilibrium growth path improves with time because demand for manufactured exports grows much faster than that for food exports.

The notion of duality we borrow from Latin American Structuralists. The idea of historically dating the equilibrium position we borrow from econometrics where relationships that are permanent in time are equilibrium features.² Equilibrium as a state in which agents optimize their relative position we borrow from Pareto (1909), Harrod (1939) and Hahn (1984), although we do not apply this in a general equilibrium context. Equilibrium as an attractor occurs when agents perceive the advantage of such an equilibrium (Pareto 1909). An example of an equilibrium as an attractor would be the

² For example, when explaining co-integration in his widely used econometrics textbook Enders (2004) says: '[...] an equilibrium relationship means that variables cannot move independently of each other' (p. 319); and 'The econometric use of the term makes reference to any long-run relationship among nonstationary variables' (p. 322)..

comparative advantage equilibrium position in an open economy. In the “dynamic comparative advantage” literature the economy has an existing low growth equilibrium associated with its comparatively advantageous sector (say agriculture) and also a high growth equilibrium that would be unleashed if temporary tariff protection allowed the ‘infant industry’ with increasing returns to develop. In Argentina, the existing industrial equilibrium needs no tariff protection to pull the economy out of its comparative advantage position where unemployment is high, capital goods’ prices are low and external demand for manufactures is growing fast. But the industrial equilibrium provides landowners with liquidity that is disposed of with agricultural equilibrium preferences, which attracts the economy back towards its comparative advantage position, and so on in continuous instability. We consider Argentina’s dual equilibrium in 1953-2004 as a function of its two different purchasing power parity exchange rates that relate, in turn, to two different sets of labour demands, relative prices, wages, rent income and external demands. In each of the two corresponding sectors (agriculture and manufacturing) rational agents align their individual behaviour accordingly. To be sure, purchasing power parity exchange rates are measured by product: every product in every economy has its own purchasing power parity exchange rate.³ Therefore, in every economy, at any point in time there are different purchasing power parity exchange rates and resources tend towards the most advantageous one maximizing trade and output, as indicated by conventional Ricardian trade theory. In Argentina, however, during the period of analysis two remarkably and permanently different PPP exchange rates co-exist and each one of them is associated, in turn, with two very different sets of relative prices and economic structures supplying and demanding resources at rates that are also remarkably and permanently different. Moreover, rational economic agents within each sector behave in noticeably different ways. At first sight, this may seem to be simply a ‘dual economy’ situation like the one discussed, for example, by Broek (1942) for Indonesia and need not imply the existence of dual equilibria. In most ‘dual economy’ cases discussed in the traditional development economics literature (e.g. Lewis 1954), resources move in one direction only attracted either by the ‘modern’ sector or the ‘backward’ sector depending where the comparative advantage may be. What led us to argue that two equilibria exist in Argentina, is that both sectors behave as attractors. The comparatively advantageous one is an equilibrium in its own right and attracts resources in the conventional way, but the industrial position attracts resources in conventional supply and demand terms too. This

³ The economy’s weighted average aggregate purchasing power exchange rate is commonly used to make international comparisons as in, for example, Maddison (2001).

tension between the two attractors is reflected in the labour market, in the foreign exchanges, in the distribution of income and, inevitably in the country's institutions. To describe Argentina's situation in the period considered (1953-2004) we introduce the term 'dual equilibrium exchange rates'. The reason why the term has not been used previously is, perhaps, partly because it refers to a rare case of little relevance to any other economy in the world: that of strong comparative advantage in food production combined with a well established industry in a peripheral economy. Even for Argentina, the relevance of the term 'dual equilibrium' will tend to lose relevance to the extent that agriculture loses ground with time. The only similar case was, perhaps, that of Australia. But Australia shows two important differences: a) it has had a much less elastic labour supply and b) it moved gradually out of food exports and into minerals, services and some manufactured exports. Whether the term 'dual equilibrium' might be applied to economies that combine a major energy-exporting sector with a strong manufacturing sector is an interesting question but one outside the scope of this thesis. Let us just recall that world demand for minerals grows at a rate closer to manufactures demand than to food demand. Moreover, minerals are not wage goods and in many countries oil wells and oil fields belong to the government, which often does not adjust prices immediately in response to market fluctuations, so the consequences of the dual economic structure for the relative price system would not be as strong as in the case of Argentina.

It is perhaps worth noting that a conflict between the economic interests of agriculture and industry is not a uniquely Argentinean phenomenon. In the nineteenth century it typically took the form of a conflict over trade policy. In early nineteenth century Britain, with its ruling class of landlords interested in high domestic food prices, agriculture supported protection and industry free trade. In the USA before the Civil War, the South, with its export oriented plantation agriculture, supported free trade, and the North, with its infant industries, supported protection. Similarly, in late nineteenth century Russia, industry supported protection and agriculture free trade. In all three cases these different interests generated major socio-political conflicts.

The emphasis in Chapter 4 is on the domestic determinants of the cycle. We abstract from important foreign determinants such as international trade fluctuations and world output fluctuations that are usually considered in the development economics literature. From the world economy we select only two elements. First, the exogenous world demand for manufactured exports that grows approximately twice as fast as that for food exports, which determines the long term balance of payments constrained equilibrium growth rate. Secondly, the abundance of foreign loans that accelerated with the oil shocks but that

occasionally stops either because of a rise in the country's perceived risk or because of exogenous events affecting the international capital markets, which affects the timing of the cycle but does not determine the workings of the cycle as such.

In order to focus on the structural determinants of its growth cycle we have abstracted from Argentina's erratic policies. Throughout the period 1953-2004 Argentina's government repeatedly pursued outrageous fiscal and monetary policies that led to hyperinflations and defaults. With endogenous uncertainty, however, inconsistent policies are, in part, endogenous attempts to overcome the recessive phase of the cycle. Moreover, the exchange rate volatility generates a severe conflict over the distribution of income that harms institutions. To measure the exact proportion in which this is an endogenous phenomenon (as opposed to an exogenous influence in the real business cycle theory sense) would require isolating the equilibrium conditions from policy action, from international capital movements, from terms of trade effects, from expectations and a large number of other effects that influence price and quantities movements. In fact, our attempts to test conventional macroeconomic models for Argentina have been unsuccessful. As a disclaimer we may add that no one else has succeed either. Nevertheless, we found sufficient data and stylised facts to illustrate our argument that in a wage goods exporting semi-industrialised economy market forces tend to generate exchange rate volatility, uncertainty, business cycles and conflict over the distribution of income. Based on these stylised facts we attempt to provide a sensible explanation. The aggregate general equilibrium alternative of assuming that the economy tends to behave as in a Solow growth model in the long run and ascribe the deviations from such a trend to erratic government policies would not seem entirely satisfactory since we have found an explanation that would seem to relate more naturally to Argentina's stylised facts. Nevertheless, our theory does not deny that inconsistent government policies may have widened the cycle's amplitude and, worst of all, by undermining institutional quality have reduced the trend below its long term possibilities.

The theoretical framework used throughout this work draws on different sources. During the research work, the method applied was based on selecting the right tool to explain the problem at hand while trying to avoid, to the extent that this is possible, the use of a preconceived theoretical framework. From David Ricardo's *Principles of Political Economy* we use several notions: a) the rent income emerging from the property of limited natural resources (be it OPEC's oil fields or Argentina's land) is of a significant magnitude and it is important what use rentiers make of it; b) rentiers have different incentives than entrepreneurs, for they need not re-invest their income in order to stay in

business; c) the distribution between wages and profits need not equal the factorial marginal productivities even if the economy is at its 'natural' state. From development economics writers (i.e. Prebisch 1950, McKinnon 1964 and Chenery & Bruno 1962) we have drawn the notion that growth in most developing economies is not constrained by the availability of labour or natural resources but rather by the possibility of importing capital goods and technology; the so called 'balance of payments constrained growth' (Thirlwall 1979). Moreover, such imported technology does not allow adopting techniques that would permanently absorb all of the excess labour (Findlay 1970 and 1979). Therefore, for simplicity, just like most development writers do, when discussing the case of Argentina we assume constant production coefficients. This seems awkward in a growth model since it is indisputable that, in the long run, relative prices and production coefficients change significantly. There is no intention of defying this basic concept. The point here is that, important as they are in relation to many other aspects of capital accumulation, such changes in production coefficients do not solve structural labour unemployment in a semi-industrialised economy such as Argentina that imports most of its capital goods and is surrounded by countries with lower wages, abundant labour and structural unemployment. From Ricardo, Marx, Kalecki, Keynes and Schumpeter among others, we take the notion that the entrepreneur is at the centre of capital accumulation and that decisions taken at the firm are of great importance in determining the position of the overall economic system. In particular, a central aspect of the theory is that the firm's concern about its management control determines its long term borrowing policy (Modigliani & Miller 1958 and Wood 1975). This sets a limit, in our view, to the amount of rentiers' income to be borrowed in equilibrium, which seems in line with Kalecki's 'increasing risk of borrowing' although Kalecki hardly ever talked about 'equilibrium'. This long term behaviour of firms links, theoretically, chapter 1 with chapter 4. In chapter 1 firms do not immediately borrow all of OPEC's surpluses which induces recession. In Chapter 4 firms do not immediately borrow landowners additional savings emerging from the devaluation which induces recession too.

From the above mentioned classical writers we use the notion of 'cost pricing'. Although throughout most of this work we assume real prices and hence abstract from inflation, whenever referring to it we use the Latin American Structuralist theory of inflation (i.e. Olivera 1964) because it explains both the inflation with recession 'paradox' following the oil shocks and the long term inflationary problem of Argentina.

From game theory we apply an old principle rooted in Marx's *Das Kapital* that in a competitive and uncoordinated environment, agents seeking their individual benefit

collectively tend to harm their own interest. Following Kalecki (1935), Coase (1937) and Harrod (1939) we apply this principle to explain why in Argentina's highly uncertain environment domestic investors persistently move away from equilibrium in a multiplier-accelerator process. Following Morris & Shin (1998) and Bachetta et. al. (2006) we also apply that old principle to explain why agents may persistently move away from equilibrium in Argentina's currency market.

Instead of the above described eclectic theoretical framework made of different theories mostly in the classical tradition, we could have started from the general equilibrium neo-classical framework of constant returns to scale and factor prices equal to their marginal productivities and made explicit each and every one of the violations to the theory that enable us to deal with the object of our analysis. The final product would be far away from general equilibrium theory and we feel that it is simpler to take the classical road, but this is inevitably a personal choice. Those trained in the classical tradition would probably find it more natural to follow the argument as it is here laid out. Those used to the general equilibrium theory may have preferred the alternative road. We can only hope that such choice has been a sensible one considering the subject of analysis.

The mathematics used in this thesis are simple and the style is the old structural form systems of equations modelling (with the corresponding endogenous and exogenous variables) that is seldom used in frontier research nowadays. Nevertheless, we have opted for such style because, with its simplicity, it enables us to highlight the relevant behavioural relationships. The reader may find that most of this work is comprehensible without the use of its mathematics that is included primarily to ensure a consistent framework and to check the validity of the argument and the conditions under which it holds.

With the exception of chapter 3, the models presented in this thesis are not for empirical testing. However, despite their simplicity these models allow us to highlight relevant behavioural equations in the analysis. As mentioned above, up till now testing aggregate models against Argentina's data has not been fruitful. Even Nobel prize winner Kydland (2006, p. 1380) acknowledges the "large discrepancy" between his model predictions and some of the data for Argentina. This difficulty may be due to poor quality data, as suggested by Kydland, and/or to Argentina's high structural volatility. However, this does not mean that there is a complete failure to test theory against data in this study. Of all the variables used in our model the only significant estimates ever obtained in Argentina's history are for the imports' elasticities, which we use. Since these estimates were out of

date empirically and/or theoretically, and because of the role that they play in our theory, new elasticities estimates are presented in Chapter 3. Given this situation, the use of our methodology based on behavioural structural modelling would not seem inappropriate for it allows the highlighting of Argentina's main behavioural relationships, illustrating them with the available data, and showing how a key parameter actually has the kind of value assumed in our theoretical framework.

In relation to the quality of the data on the Argentinean economy one would expect that Argentina's poor institutional quality and large and growing informal sector would have also affected the government data collecting procedures. The quality of the data should have also been affected by the high volatility in relative prices to the extent that quarterly data is not all instantaneously recorded at the same time and the relative value of a certain good or service would be very different from one week to the next. Nevertheless, the available data would seem to depict what personal experience and general evidence indicates has been Argentina's overall economic developments over the last 50 years or so. Partial evidence for this is our Chapter 3 where statistically significant estimates are obtained for the imports demand function for 1970-2004, which involved the use of GDP, imports, terms of trade, nominal exchange rate and Consumer Price Index data. To be sure, data on some variables used to illustrate chapter 4 are missing in the early years of the 1953-2004 period. For example: quarterly GDP data is not available before 1970; aggregate monetary data is not available before 1969; non-banking financial flows in the balance of payments is not available before 1988; financial services in the current account are not fully available before 1992, the methodology to estimate the wage share in national income changed significantly and repeatedly in 1950-2004 and in various periods it was not produced at all; data on poverty is not available before 1988; various and inconsistent official calculations of the evolution of the public foreign debt exist; data on capital flight does not exist and can only be indirectly derived from other sources, etc. Nevertheless, unlike Kydland we did not find "large discrepancies" between theory and data and we were able to illustrate our simple models with the available stylised facts and obtain robust econometric estimates of the demand for imports function.

Economics is built on the principle of supply and demand working effectively in the long run. Thus, low price elasticities are seldom used in conventional economic theory. High income elasticities are not used either because they imply, by definition, that one variable grows permanently faster than the other, something that simply could not hold as time tends to infinity. In this work, however, we make extensive use of both a low price elasticity of supply of exports and a high income elasticity of demand for imports for the

following reasons. Dual equilibrium generates uncertainty about the long term equilibrium exchange rate and this permanently depresses the price elasticity of the supply of exports. Moreover, for centuries manufacturing production has grown faster than agricultural production. This results from the remarkable long term growth of per capita income in the world economy (taken as a whole) given that demand is non-homothetic. Thus, it can indeed happen that two related variables grow at very different paces, like output and population do in the long run. In the case of a semi-industrialised economy, imports grow faster than output for similar reasons: as per capita income increases agents tend to demand more sophisticated manufacturing products with a high import coefficient, rather than more domestic products. As time tends to infinity either the economy fully industrialises or suffers from cyclical bottlenecks for lack of foreign exchange, especially if its exchange rate elasticity of supply of exports is low. In addition, if such an economy exports food, its long term growth rate would tend to be relatively low (albeit increasing as the manufacturing to food exports ratio rises). Therefore, when a theory accounts for products with specific supply and demand characteristics, price and income elasticities can become relevant in the long run analysis. This does not challenge the basic supply and demand principle which allows us, for example, to establish the dual exchange rate equilibrium based on the 'law of one price'.

Although relative prices are important in our analysis, these are not the prices usually found in the standard growth models *à la* Solow. For simplicity, we do not allow for quantities of capital and labour to adjust to relative price signals. The removal of this assumption would not change the main argument for it would not modify Argentina's long term trend for structural unemployment or its dependence on imported technology and would make the presentation unnecessarily complex. The relevant prices for economic growth are the prices of capital and labour and since most advanced technology capital goods and services are imported and the economy exports wage goods, the single most important price is the exchange rate.

The domestic rate of interest is absent in our analysis of Argentina. This is because its monetary/banking sector is small relative to GDP and with little influence over the level of output. Total deposits are of a very short term maturity and represent a small fraction of GDP (less than 20% on average over the period of analysis) and a large fraction of such liabilities are lent to the government which either finances deficits or accumulates reserves. Lending to the private sector is small, short term and expensive (high real rates of interest for borrowers and low ones for depositors). This is the consequence of long term endemic high inflation that has been analysed by Olivera (1964) based on

downwards rigidity of monetary prices and structural disequilibrium among the different sectors in the economy. We do not, however, discuss inflation. In Argentina most firms and families finance expenditures with their own savings. A large fraction of long term private savings are held abroad. Capital flight is the consequence of endemic uncertainty and low institutional quality which we partially attribute to Argentina's duality of equilibrium.

It may seem strange to discuss economic developments in very-inflationary Argentina in 1953-2004 abstracting from the all-pervasive inflation. For many foreign economists that is the most interesting feature of Argentina's development. However, the inflation issue has been extensively discussed by others. In Argentina inflation is partially the consequence of irresponsible monetary policies and partially a consequence of its dual economic structure. Both type of inflation are related to the cycle. Irresponsible monetary policies result, in part, from the attempt by the government to by-pass the recessive phase of the cycle. According to the structuralist theory of inflation (Olivera 1964) with downwards nominal price rigidity the severe relative price changes after a devaluation produce high inflation that generates uncertainty and feeds recession which contributes to generating the trade surplus which produces a movement of the exchange rate in the opposite direction which, again, produces a change in relative prices that, again, produce inflation which erodes export competitiveness, and so on. The formation of persistent inflationary expectations weakens the long term growth path. Naturally, irresponsible monetary and fiscal policies only worsen the problem. In short, the cycle generates inflation that feeds back into the cycle in the form of uncertainty. For simplicity, we have chosen to abstract from inflation and keep uncertainty as a fact of Argentina's economic structure. While some non-Argentinean readers may find this focus on real variables strange, for an Argentinean it is quite normal. Decades of inflation have taught everybody in Argentina to think in real, inflation-adjusted, terms. Real estate is priced in dollars and even consumer finance loans are indexed. For decades the exchange rate and the consumer price index have been in every newspaper, on television, and there are phone numbers and web pages with the spot exchange rate. This does not mean that agents are able to calculate assets' net real present value - as agents do in Kydland's perfect foresight real business cycle theory. In Argentina agents decide in current real terms but ignore future inflation and hence future real prices. In fact, with chronic and uncertain inflation, there has hardly ever been any futures trading in the foreign exchange market.

Let us highlight those aspects in which the world economy and Argentina seem to have taken a different road since 2004, relative to what we here discuss.

The third oil shock of 2004-2007 is currently having very different consequences than the two previous ones. Neither inflation nor recession seem serious problems nowadays. Indeed, in 2005-2007 the world economy grew at a rate above the post World War II average and inflation was relatively low by historical standards. Our analysis of the first two oil shocks assumed rigid real wages, no structural change and a very low propensity to spend by the oil-periphery. These three assumptions would have to be relaxed somewhat for the case of the third oil shock. Thus, firstly, real wages became more flexible in most of the industrialised economies after the second recessive oil shock. In addition to real wage flexibility, the competition from newly industrialised exporters such as China and India may have also induced flexibility in firms' mark-up pricing contributing to an overall buffering of cost inflationary pressures. Secondly, high real oil prices after 1973 have gradually led to a structure of production that is less dependent on oil per unit of output. This is insufficient to prevent the severe ecological damage that total oil consumption is causing but this is a different subject. Furthermore, this less oil dependent structure of production per unit of output was accompanied by a remarkable productivity increase in the nineteen nineties led by the United States. This productivity increase allowed for high profitability, demand and growth throughout most of the western industrialised economies and enabled these economies to better absorb the oil shock. Thirdly, some oil-exporting peripheral economies still have a very low propensity to spend, but many others have noticeably increased their expenditure ratios. Finally, in real terms the 2004-2007 oil price increase has been less severe than the two previous ones.

In Argentina, after the last 2001-2002 crisis, GDP has grown without interruption for 20 quarters (III:2002-I:2007) at a 9% cumulative annual rate. This had not happened since the turn of the nineteenth century. Such prosperity comes along with a) a sustained food demand (mostly soya) from fast industrialising economies such as China and India and correspondingly high international commodity prices; b) relatively low international interest rates; c) sustained fiscal surpluses in Argentina (aided by the cut in foreign debt service after the last default and the cut in real public wages after the 2002 devaluation) that have allowed the Central Bank to accumulate reserves; and d) such permanent reserves accumulation has enabled the government (by selling pesos from its fiscal

surplus) to sustain a high exchange rate⁴ (low domestic currency value) for 22 quarters and thus built up a policy aimed at stabilizing the long term exchange rate expectations as an incentive to investment in manufactured exports. These four events have never previously occurred simultaneously in Argentina's history. The analysis in this thesis for the 1953-2004 period suggests that if these four conditions were sustained over a long period of time, Argentina's growth cycle would change in a permanent way and a different model would have to be used to discuss it. Note, however, that these four are difficult conditions to satisfy. For example, the accumulation of reserves may tend to overvalue the currency undermining the export sector which may lead, eventually, to the need to deplete reserves to sustain the level of activity triggering the cycle once again.

The notion that Argentina has a duality between highly fertile agriculture and industry and that this imposes a restriction to its economic development can be traced back in time to Olivera (1924). Its importance for Argentina is a result of the huge share of its exports provided by agriculture. This has been steadily declining, but at the beginning of the period considered in chapter 4 it was 96% and even at the end still 59% (see table A.7). Structuralism focused on the cycle's ceiling determined by Argentina's dual socio-economic structure as reflected in the price and income elasticities of foreign trade (Diaz Alejandro 1963, Ferrer 1963, Olivera 1963, Eshag & Thorp 1965, Braun & Joy 1968 and Diamand 1972). That natural-resource abundance can, on its own, hamper growth has been extensively discussed, particularly after the sharp world commodity price increases that accompanied the oil shocks. Thus, the weak growth trend of some natural-resource abundant economies since the early seventies is explained by Corden & Neary (1982) and Wijnbergen (1984a & 1984b) with the crowding out of a positive externality sector. Mehlum, Moene & Torvik (2006) show how such "natural resource curse" is also (inversely) related to a given institutional quality, but omit "agrarian societies". Matsuyama (1992) discusses fertile-land abundant economies and refers to the case of Argentina in the nineteenth and twentieth centuries but it considers neither institutional quality nor cycles. The full determinants of Argentina's institutional quality require specific research. In this respect, however, our argument is that institutional quality becomes partially endogenous, as a result of the combination of wage goods exports with semi-industrialisation. Thus, although different aspects of the argument presented in

⁴ In this thesis, Argentina's exchange rate is AR\$/US\$. Accordingly a 'high' exchange rate is one with a low value for the domestic currency measured in US dollars, and a 'low' exchange rate is one with a high value for the domestic currency measured in US dollars.

chapter 4 have been discussed before, it is the particular combination of them in the context of dual equilibrium for the explanation of Argentina's growth cycle in the 1953-2004 period that makes this an original contribution.

Chapter 1 was originally published in the *Cambridge Journal of Economics* in 1985. Chapter 2 was originally published in *Economic Notes by Monte dei Paschi di Siena* in 1993. Chapter 3, which is jointly authored, was submitted for publication to the *Journal of Policy Modelling* in November 2006. It has also been circulated as a *Working Paper (2007/009)* of Lancaster University Management School. Chapter 4 was submitted for publication to the *European Economic Review* in January 2007.