

PRODUCTIVE DIVERSIFICATION IN NATURAL RESOURCE ABUNDANT COUNTRIES

**Limitations, policies and the experience
of Argentina in the 2000s**

A dissertation submitted by

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(Argentina)

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To my father



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Abstract

The debate on the pattern of specialization in natural resource abundant countries has re-emerged as demand for raw materials and food products from the rapidly growing East Asian countries, speculation in financial markets, and changes in production techniques augmented the demand and supply of natural resources-related goods.

Up to mid-2008, when the US subprime mortgage crisis gave birth to a world economic meltdown, these transformations promoted a primary commodity boom and a (more) promising future scenario for developing countries: it remains to be seen whether these expectations will materialize. Positive natural resource shocks can be a blessing, but can also be a curse, witness what occurred in many countries after the primary commodity boom of the 1970s.

Using alternative, but complementary methodologies, this research explores the impulses for and limitations to productive diversification associated with a positive natural resources shock, as the one Argentina (and other South American countries) have been experiencing recently. The research investigates some of the policies that have been or could be implemented to manage the effects of the shocks and to promote a more diversified pattern of specialization in resource rich Argentina during the 2000s.

The investigation starts (chapter 2) by evaluating some cross-country empirical regularities in the relation between the patterns of specialization and economic growth. Using up-to-date econometric techniques and alternative indicators of trade specialization patterns, the research questions the (un)avoidability of the so-called resources curse and shows that processing natural resource can be growth enhancing, an effect that is frequently described, but rarely demonstrated.

Most of the chapters in the thesis make an economic-policy oriented and country-case analysis focusing on the interactions among the natural resource sector and other sectors of the economy and how these interactions, in combination with economic policies, can be conducive or not to productive diversification. These complex interactions are explored first using analytical multisectoral models and then through an applied computer general equilibrium model CGE model combined with a small Social Accounting Matrix (SAM) for Argentina, which is updated to 2004.

The analytical chapters of the research (chapters 3 and 4) extend the standard dependent economy model to incorporate productive linkages and one of Argentina's most relevant structural features, an agricultural sector that has natural competitive advantages and produces wage-goods that are exported and consumed domestically. In contrast to the standard model, the extended models developed in this research suggests that a positive natural resource shock can be beneficial to productive and export diversification if, directly or indirectly, it encourages productive linkages, such as investment in infrastructure. The analytical models are also employed to analyse the effects of Argentina's competitive exchange rate policy. The results suggest that using exchange rate devaluation (with no compensatory policies) to promote structural change is more costly in wage-goods exporting countries such as Argentina, than in countries that have different structural characteristics. They also suggest that exchange rate devaluations, if expansionary, improve the price and non-price competitiveness of the economy since growth in aggregate demand promotes learning and specialization economies through the so-called Kaldor-Verdoorn effect.

Based on the insights from these analytical chapters, Argentina's SAM and an eclectic structuralist CGE model are used to evaluate in chapters 5 to 8 how impulses from positive demand and supply natural resource shocks and economic policies (particularly exchange rate, export tax and government expenditure decisions) have been affecting output growth and the pattern of trade specialization in Argentina in the 2000s.

The research shows in chapter 7 that the recent boom in primary commodity prices, if not coupled with export taxes, can be contractionary in the medium-term, as it constrains the competitiveness of the non-natural resources sectors. This contrasts with the effects of positive supply shock, such as the expansion of Argentina's agricultural sector,

which, in a managed and competitive exchange rate regime, can be expansionary and beneficial for productive and export diversification.

The thesis concludes (chapters 7 and 8) by providing some insights on the role of economic policies in Argentina during the period 2003-2007. It shows that Argentina's competitive exchange rate policy has been one of the factors behind the country's rapid and sustained economic expansion. The exchange rate policy has counteracted Dutch disease adjustments associated with the terms of trade shock and has improved the price and non-price competitiveness of the tradable sector; it therefore has been one of the factors behind the process of productive and export diversification observed in recent years. Finally, the thesis shows that, for this policy to be expansionary, taxes on natural resource exports need to be an integral part of Argentina's competitive exchange rate regime in a wage-goods exporting country such as Argentina,, although additional counter-cyclical policies are also needed to slow down the demand impulses promoted by a competitive exchange rate.



Samenvatting

Het debat over het specialisatiepatroon in landen met veel natuurlijke hulpbronnen is weer opgeblaaid omdat de vraag naar en het aanbod van producten op basis van natuurlijke hulpbronnen zijn toegenomen. Dit ligt aan de toegenomen vraag naar grondstoffen en voedingsproducten in de snelgroeiende Oost-Aziatische economieën, aan speculatie op de financiële markten en aan veranderingen in productietechnieken.

Deze ontwikkelingen hebben bijgedragen aan de hausse in grondstoffen, tot de hypotheekcrisis in de Verenigde Staten halverwege 2008 een wereldwijde economische crisis veroorzaakte. Die hausse leidde tot positieve(re) toekomstscenario's voor ontwikkelingslanden, maar het is nog niet duidelijk of deze verwachtingen uit zullen komen. In veel landen is na de hausse in grondstoffen van de jaren zeventig gebleken dat positieve grondstoffenschokken zowel een zegen als een ramp kunnen zijn.

Dit onderzoek gebruikt verschillende complementaire onderzoeksmethoden om de factoren te bestuderen die productieve diversificatie naar aanleiding van een positieve grondstoffenschok stimuleren of belemmeren. Argentinië (en andere Zuid-Amerikaanse landen) hebben recentelijk een dergelijke schok meegemaakt. Het onderzoek richt zich op een aantal beleidsmaatregelen die vanaf 2000 genomen zijn of genomen zouden kunnen worden om de effecten van de schokken te beheersen en om een gediversifieerder patroon van specialisatie te bevorderen in een land met zo veel natuurlijke hulpbronnen als Argentinië.

Dit onderzoek evalueert allereerst een aantal empirische wetmatigheden ten aanzien van het verband tussen specialisatiepatronen en economische groei (hoofdstuk 2). Daarbij wordt gebruik gemaakt van moderne econometrische technieken en verschillende indicatoren van specialisatiepatronen in de handel. Er worden vraagtekens geplaatst bij de onvermijdelijkheid van de zogenaamde 'vloek van de hulpbronnen'. Uit dit

onderzoek blijkt dat de verwerking van natuurlijke hulpbronnen de groei kan bevorderen. Dit effect wordt vaak beschreven, maar is zelden aangetoond.

De meeste hoofdstukken in dit proefschrift bevatten casestudy's van het binnenlands economisch beleid, waarbij de interactie tussen de grondstoffensector en andere economische sectoren centraal staat. De onderzoeksvraag is in hoeverre deze interactie in combinatie met het economisch beleid leidt tot productieve diversificatie. Deze complexe interacties worden eerst geanalyseerd met meersectorenmodellen en vervolgens met een toegepast algemeen evenwichtsmodel (Computer General Equilibrium model of CGE-model) in combinatie met een kleine Sociaaleconomische sectorale weergave van de macro-economische gevolgen van de overheidspolitiek (Social Accounting Matrix, SAM) voor Argentinië, die bijgewerkt is tot 2004.

In de analytische hoofdstukken van het onderzoek (hoofdstuk 3 en 4) wordt het standaardmodel voor afhankelijke economieën uitgebreid met productieve verbindingen en met een van de relevantste structurele kenmerken van Argentinië. Dit is dat het een land is met een landbouwsector die natuurlijke concurrentievoordelen biedt en goederen produceert die zowel voor de export als voor de binnenlandse markt bestemd zijn. In tegenstelling tot het standaardmodel geven de uitgebreide modellen die in dit onderzoek ontwikkeld zijn aan dat een positieve grondstoffschock gunstige effecten kan hebben. Een positieve grondstoffschock kan productieve diversificatie en diversificatie van de export bevorderen als productieve verbindingen, zoals investeringen in de infrastructuur, hierdoor direct of indirect worden gestimuleerd. De effecten van het concurrerende wisselkoersbeleid van Argentinië worden ook met de analytische modellen geanalyseerd. Hieruit blijkt dat devaluatie van de valutakoers (zonder compenserende maatregelen) als middel om structurele verandering te bevorderen in exportlanden zoals Argentinië meer kosten met zich meebrengt dan in landen met andere structurele kenmerken. Uit de resultaten blijkt ook dat de prijsconcurrentie en de algemene concurrentiepositie van de economie verbeteren als de devaluatie van de valutakoers expansief is, omdat een groei van de totale vraag het leren en de specialisatie van de economie bevordert. Dit is het zogenaamde Kaldor-Verdoorn effect.

De bevindingen uit de analytische hoofdstukken vormen de basis voor het onderzoek dat in hoofdstuk 5 tot en met 8 beschreven wordt.

Met de SAM voor Argentinië en een eclecticisch structuralistisch CGE-model worden de effecten van positieve schokken in de vraag naar en het aanbod van natuurlijke hulpbronnen en de effecten van het economisch beleid (vooral op het gebied van de wisselkoers, exportbelasting en overheidsuitgaven) onderzocht. Het gaat hierbij om de vraag in hoeverre deze twee factoren vanaf het jaar 2000 de productiegroei en de specialisatie in de handel in Argentinië hebben beïnvloed.

Uit de onderzoeksresultaten in hoofdstuk 7 blijkt dat de recente hausse in de prijzen voor grondstoffen op de middellange termijn restrictief kan zijn als deze niet gekoppeld wordt aan exportbelasting, omdat hierdoor de concurrentiepositie van de overige sectoren verslechtert. Effecten van een positieve schok in de vraag, zoals de groei van de Argentijnse landbouwsector, kunnen daarentegen expansief zijn en productieve diversificatie en diversificatie van de export bevorderen, mits er gezorgd wordt voor een concurrerende wisselkoers.

De laatste hoofdstukken van dit proefschrift (hoofdstuk 7 en 8) bieden inzicht in de rol van het Argentijnse economisch beleid in de jaren 2003 tot 2007. Het concurrerende wisselkoersbeleid blijkt een van de oorzaken te zijn van de snelle en duurzame economische groei in Argentinië. Het wisselkoersbeleid is een remedie tegen de Hollandse ziekte, die gepaard gaat met de schok in de ruilvoet. Door dit beleid is de algemene concurrentiepositie van de handelssector verbeterd. Dit beleid is daarom een van de factoren die de laatste jaren hebben bijgedragen aan de productieve diversificatie en de diversificatie van de export. Ten slotte blijkt uit dit onderzoek dat dit beleid alleen expansief is als de exportbelasting op natuurlijke hulpbronnen een integraal onderdeel vormt van het Argentijnse concurrerende wisselkoersbeleid. In een exportland als Argentinië is er echter ook aanvullend anticyclisch beleid nodig om de toename in de vraag die ontstaat door een concurrerende wisselkoers af te remmen.



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