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Three essays on the rise of Sovereign Wealth Funds

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Introduction Générale

Les fonds souverains, véhicules d'investissement publics qui gèrent une partie de la richesse des Etats, font l'objet d'une attention croissante depuis la fin des années 2000. Le montant des actifs gérés par ces fonds est passé de 500 milliards de dollars en 1995 (Ciarlone & Miceli (2014)) à 7,3 trillions en 2017 (SWF Institute), soit une croissance moyenne de près de 13% par an. En outre, le nombre de fonds souverains n'a cessé de croître ces dernières années. 43 nouveaux fonds ont ainsi été créés depuis 2005, portant le nombre de fonds souverains dans le monde à 93 en 2017.

Si les fonds souverains ne sont pas nés avec la crise des *supprimes*, leur médiatisation s'est accrue durant les années 2007-2008 du fait d'importantes participations prises dans certains institutions financières de renom, au premier rang desquelles figurent Citigroup, Morgan Stanley ou Barclays Bank.

Cette puissance financière croissante des fonds souverains, alliée à des prises de participations hautement médiatisées, a suscité des interrogations quant aux risques associés à ces investisseurs : "*The fear is that these so-called sovereign wealth funds could destabilize markets or provoke a political backlash*" ^a ("*A fear of foreign investments*", The New York Times, 21 août 2007). Ces inquiétudes se concentrent principalement autour du potentiel déstabilisateur de ces investisseurs, et de leur stratégie d'investissement : les

a. [traduction] La crainte est que ces fonds souverains puissent déstabiliser les marchés ou engendrer des répercussions politiques.

fonds souverains sont-ils guidés par les mêmes motivations que les investisseurs institutionnels ? Ces investisseurs ont-ils un objectif de rendement financier ou poursuivent-ils des objectifs plus stratégiques ? Les investissements des fonds souverains peuvent-ils déstabiliser les marchés financiers ou au contraire avoir un effet contracyclique ?

Le manque de transparence de certains fonds alimente plus encore ces interrogations. Le fonds saoudien *SAMA Foreign Holding*, cinquième fonds en termes d'actifs gérés et le fonds chinois *SAFE Investment Company*, septième fonds, ont en effet un indice de transparence^b de 4/10. Le fonds Qatari, *Qatar Investment authority* (320 milliards de dollars d'actifs gérés), le fonds Chinois, *National Social Security Fund* (295 milliards de dollars) et le fonds de Dubai, *Investment Corporation of Dubai* (200 milliards de dollars), ont un indice de transparence de 5/10.

Ces préoccupations ont impulsé le développement d'une littérature dédiée à l'analyse de ces investisseurs. Le terme "*Sovereign Wealth Funds*" (Fonds Souverains) a été utilisé pour la première fois en 2005 (Rozanov (2005)). Depuis, les recherches sur ce sujet se font de plus en plus nombreuses en vue de mieux comprendre ces investisseurs et d'apporter des éléments de réponse aux interrogations qu'ils soulèvent, notamment dans les pays développés. A ce jour, SSRN renvoie 429 résultats pour le terme "*Sovereign Wealth Funds*".

Dans ce chapitre introductif, après une première section descriptive, je présenterai les différentes définitions des fonds souverains. J'exposerai ensuite les principaux résultats de la littérature sur le sujet afin de mener la réflexion vers les questions de recherche qui seront traitées dans les trois chapitres qui constituent cette thèse. Enfin, comme la recherche empirique sur les fonds souverains doit faire face aux problèmes liés à la disponibilité et à la fiabilité des données, j'exposerai également la méthodologie utilisée

b. L'indice de transparence Linaburg-Maduell a été développé au sein du SWF Institute par C. Linaburg et M. Maduell. Il permet d'évaluer le niveau de transparence des fonds souverains sur une échelle de 1 à 10. Plus l'indice est élevé, plus le fonds est considéré comme transparent. Pour plus de détails sur la construction de cet indice, voir : <http://www.swfinstitute.org/statistics-research/linaburg-maduell-transparency-index/>.

afin de collecter les données nécessaires à tout recherche empirique dans ce domaine.

Pourquoi les Fonds Souverains sont ils un sujet de préoccupation ?

Un pouvoir financier croissant

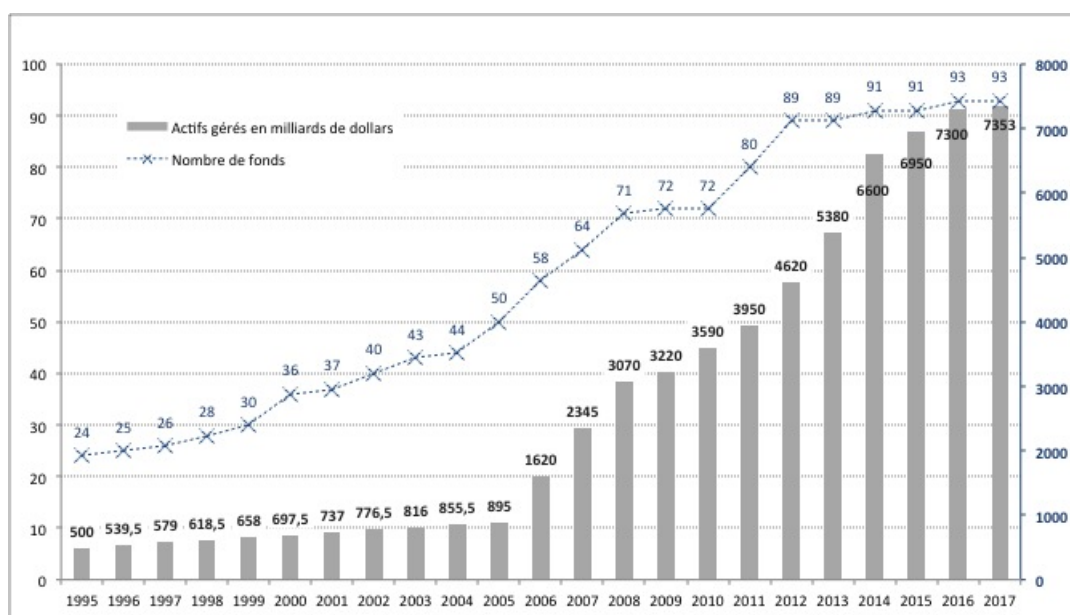


Figure 0.1. – Evolution des fonds souverains (nombre de fonds et actifs gérés)

Sources : Rapports Preqin, SWF Institute, Rozanov (2005), Base de données de l'auteur

Les fonds souverains, s'ils ont fait l'objet d'une plus grande attention médiatique ces dernières années, ne sont pourtant pas nouveaux. Certains fonds souverains, parmi les plus puissants, ont en effet été établis dans les années 1970. C'est le cas par exemple de *Abu Dhabi Investment Authority*, créé en 1976 ou encore du fonds Singapourien, *Temasek Holdings* créé en 1974.

Toutefois, ces investisseurs ont pris de l'ampleur récemment comme l'illustre la figure 0.2. On constate une multiplication du nombre de fonds souverains depuis le début des années 2000 : sur les 93 fonds existants en 2017, près de 75% ont été créés depuis 2000. Cette tendance à la création de fonds s'est accélérée entre 2004 et 2012 avec

46 nouveaux fonds créés sur cette période. Bien que l'évolution du nombre de fonds semble se stabiliser depuis 2012 (seulement 4 fonds créés entre 2012 et 2017), cette tendance à la création de fonds se maintient avec de nombreux projets de création de fonds souverains en cours, notamment, en Israël, au Bangladesh ou en Inde.

Par ailleurs, on peut constater une croissance rapide de leurs actifs depuis le milieu des années 2000, tirée notamment par la hausse du prix du pétrole et les excédents commerciaux accumulés par les pays d'Asie. Entre 2005 et 2017, le montant géré par ces investisseurs a connu une croissance moyenne de plus de 19% par an. Malgré un ralentissement de la croissance de leurs actifs depuis 2014, consécutive à la baisse du prix du pétrole, le montant des actifs gérés par les fonds souverains a augmenté de 10% depuis cette date. La puissance financière de ces investisseurs est estimée en 2017 à 7,3 trillions de dollars (SWF Institute).

Des investisseurs qui inquiètent

La récente crise des *subprimes* a mis en lumière le pouvoir financier des fonds souverains. Le montant de leurs investissements en 2007 et 2008 est en effet estimé entre 60 et 92 milliards de dollars (Mezzacapo (2009)). Parmi ces investissements on retrouve l'acquisition de 9,9% de Morgan Stanley par le fonds Chinois *China Investment Corporation (CIC)*, l'acquisition de 15% du capital de Barclays Bank par les fonds *Temasek Holdings* (Singapour), *Qatar Investment Authority (QIA)* et *CIC*, ou encore un investissement de 15,4 milliards de dollars effectué conjointement par *GIC* (Singapour) et *Abu Dhabi Investment Authority* (Emirats Arabes Unis) pour acquérir une partie du capital de Citigroup.

En réaction à ces investissements d'ampleur, Hilary Clinton déclarait le 15 janvier 2008 "We need to have a lot more control over what they [sovereign-wealth funds] do and how they do it"^c. A la même période, *The Economist* titrait "Invasion of Sovereign Wealth Funds"

c. [traduction] Nous avons besoin de beaucoup plus contrôler ce que font les fonds souverains et la manière dont ils le font (H. Clinton - *The Democratic Debate in Las Vegas* - 15 janvier 2008).

(L'invasion des fonds souverains)^d sur une couverture représentant des hélicoptères militaires arborant les drapeaux du Koweït, de Singapour et de la Corée du Sud, chargés de lingots d'or. Ces exemples sont révélateurs des interrogations que soulèvent ces investisseurs dans les pays développés. Elles se concentrent autour des problématiques suivantes :

- Quel est l'impact des fonds souverains sur les marchés financiers ? Ces investisseurs constituent-ils une menace pour la stabilité des marchés (création de bulles spéculatives, vente massives d'actifs, etc...), ou en tant qu'investisseurs de long terme, peuvent-ils au contraire contribuer à les stabiliser ?
- Quel est l'impact des fonds souverains sur la valeur des entreprises dans lesquelles ils investissent ? L'acquisition d'une part significative d'une entreprise par un fonds souverain pose la question du statut de la-dite entreprise : est-ce une entreprise publique ou privée ? La littérature souligne en effet l'impact négatif de l'actionnariat public sur la performance des entreprises (Boubakri & Cosset (2010b) et Lin & Bo (2012)).
- Les investissements des fonds souverains constituent-ils une nouvelle forme de protectionnisme ? Les fonds souverains peuvent, en effet, soutenir leur économie en effectuant des investissements domestiques, ce qui constituerait un obstacle à la libre concurrence.
- Enfin, la principale crainte est liée aux stratégies d'investissement des fonds souverains. Parce que ces investisseurs gèrent la richesse des Etats, on peut se demander si leurs investissements répondent à une logique purement financière ou si d'autres variables, éventuellement non financières, peuvent influencer leurs décisions d'investissement. Selon Aglietta (2014), les fonds souverains sont liés au budget du gouvernement de deux manières : ils alimentent les revenus du gouvernement et ils tiennent leurs ressources de celui-ci. Pour cette raison, il est absurde de prétendre que les fonds souverains n'ont pas des comportements stratégiques. Ils sont

d. "Invasion of sovereign wealth funds", The Economist, 17 janvier 2008.

stratégiques par nature.

Un manque de transparence qui accentue ces inquiétudes

Ces interrogations se nourrissent notamment du manque de transparence de certains fonds. En effet, la transparence contribue à l'allocation efficace des ressources sur les marchés, à la stabilité des marchés notamment en période d'incertitude, et à l'efficacité des politiques annoncées (Group of 22 (1998)). Afin de promouvoir une plus grande transparence, certains fonds souverains ont créé un groupe de travail dédié à l'élaboration de règles de bonne conduite, l'*International Working Group on Sovereign Wealth Funds*, qui a abouti en 2008 à la présentation au Fonds Monétaire International (FMI) des principes de Santiago. Il s'agit d'un ensemble de 24 règles de bonne conduite visant à améliorer la transparence et la gouvernance des fonds souverains. Truman (2007), qui a élaboré une grille permettant d'évaluer les fonds souverains en fonction de leurs qualités en matière de gouvernance et de transparence, estime qu'un fonds qui respecterait l'ensemble des Principes de Santiago obtiendrait une note de 74 sur 100 avec sa propre grille.

Toutefois, les Principes de Santiago ne prévoient pas la publication des actifs gérés par les fonds et de leurs états financiers. Ce manque de transparence de certains fonds souverains a abouti à un durcissement des réglementations applicables aux investissements étrangers dans certains pays développés. En Allemagne, une loi a été adoptée en 2009, permettant un contrôle *a posteriori* des investissements étrangers s'ils présentent un risque pour « l'ordre public » ou « la sécurité nationale ». Aux Etats-Unis, le *Foreign Investment and National Security Act*, entré en application en 2008, stipule que « toute opération dans laquelle l'acquéreur est un gouvernement étranger, notamment un fonds souverain, doit être soumise au CFIUS [*Committee on Foreign Investment in the United States*] pour examen et, sauf exception, pour enquête ». (Bertin-Delacour (2009)). Plus récemment, la Commission Européenne a adopté un règlement qui force les fonds souverains à plus de transparence lorsqu'ils prennent des participations significatives dans des en-

treprises Européennes^e.

Qu'est ce qu'un fonds souverain ?

De multiples définitions

Bien que les fonds souverains soient devenus des acteurs financiers de premier plan, il n'existe toujours pas de définition unifiée dans la littérature. Cela peut s'expliquer par l'hétérogénéité des fonds souverains qui regroupent des investisseurs aussi différents que le fonds Norvégien, *Government Pension Fund - Global*, dont les objectifs et la stratégie d'investissement sont bien connus et qui gère plus de 900 milliards de dollars, et le fonds des îles Kiribati, *Revenue Equalization Reserve Fund*, dont l'indice de transparence est de 1/10 et qui gère seulement 600 millions de dollars. Le tableau 0.2, qui regroupe un certain nombre de définitions utilisées dans la littérature, illustre cette absence de consensus sur les critères qui définissent un fonds souverain.

Si on se base sur la définition du FEEM - Monitor Group (2008) par exemple, on exclut le fonds Saoudien, *SAMA Foreign Holdings*, cinquième fonds en termes d'actifs gérés (514 milliards de dollars en 2017 selon le SWF Institute) et le fonds Chinois, *SAFE Investment Company*, septième fonds (441 milliards de dollars en 2017 selon le SWF Institute).

La définition des Principes de Santiago (Santiago Principles (2008)) exclut également des fonds de première importance comme *SAMA Foreign Holdings*, *Mubadala Investment Company* (Abu Dhabi) qui gère 125 milliards de dollars ou *Samruk-Kazyna* (Kazakhstan) qui gère plus de 60 milliards de dollars.

La définition donnée par le Trésor Américain (Lowery (2007)) précise qu'un fonds souverain est financé par les réserves de change, ce qui n'est pas le cas par exemple de *Temasek Holdings*. Or, ce fonds, qui gère 180 milliards de dollars, est unanimement considéré comme un fonds souverain.

Ainsi, le seul critère autour duquel il existe un consensus est le fait qu'un fonds sou-

e. Règlement C(2017) 4644 du 11 Juillet 2017 complétant les directives 2004/39/CE et 2014/65/UE.

Table 0.1. – Définitions des fonds souverains

Référence	Définition	Critères				
		Détenu par l'Etat	Financement	Gestion	Obligations	Stratégie d'investissement
Rozanov (2005)	Les Fonds Souverains sont des fonds d'actifs détenus par les Etats, qui ne sont ni des fonds de pension publics traditionnels, ni des réserves dédiées au soutien de la monnaie nationale.	Oui	N'est financé ni des particuliers ni par des employeurs	Non précisé	Non précisé	Non précisé
Lowery (2007) (Trésor Américain)	Véhicule d'investissement détenu par l'Etat qui est financé par les réserves de change, et qui gère ses actifs indépendamment des réserves officielles.	Oui	Réserves de change	Indépendant des autres institutions financières	Non précisé	Non précisé
IMF (2008)	Les fonds souverains sont des véhicules d'investissement détenus par les Etats, établis pour différents objectifs macroéconomiques.	Oui	Non précisé	Non précisé	Non précisé	Non précisé
Jen (2007)	Les fonds souverains peuvent se définir selon cinq caractéristiques : i) ils sont détenus par l'Etat ; ii) ils investissent principalement à l'étranger ; iii) ils n'ont pas d'obligation explicite de versement ; iv) ils ont une tolérance élevée au risque ; v) ils ont un horizon d'investissement de long terme.	Oui	Non précisé	Non précisé	Pas d'obligation explicite de versement	Haute tolérance au risque/ Horizon d'investissement de long terme
Santiago Principes (2008)	Un fonds souverain est défini comme un fonds d'investissement détenu par le gouvernement, auquel sont assignés des objectifs spécifiques. Créés par le gouvernement pour des objectifs macroéconomiques, les fonds souverains détiennent ou gèrent leurs actifs dans une logique financière, et ont des stratégies d'investissement qui incluent la détention d'actifs à l'étranger. Les fonds souverains sont généralement établis à partir des excédents financiers, des opérations de change, de certaines opérations de privatisation, des surplus fiscaux, et ou des recettes issues de l'exportation de matières premières.	Oui	Excédents financiers/ opérations de privatisation/ surplus fiscaux/ recettes issues de l'exportation de matières premières.	Non précisé	Non précisé	Objectifs financiers
FEEM - Monitor Group (2008)	Un fonds souverain est un fonds d'investissement qui répond à cinq critères : i) il est détenu directement par l'Etat ; ii) il est géré indépendamment des autre institution financières publiques ; iii) il n'a pas d'obligation explicite de financement des retraites ; iv) il investit dans un portefeuille diversifié d'actifs financiers à la recherche de rendements commerciaux ; v) une part significative de ses investissements est effectuée à l'étranger.	Oui	Non précisé	Indépendant des autres institutions financières	Pas d'obligations explicite de versement	Stratégie d'investissement guidée par la recherche de rendement financier
SWF Institute	Un fonds souverain est un fonds ou une entité d'investissement généralement établie à partir des excédents de la balance des paiements, des opérations de change, de certaines opérations de privatisation, de transferts publics des surplus fiscaux, et/ou des recettes issues de l'exportation de ressources naturelles. La définition des fonds souverains exclut, entre autres, les réserves de devises détenues par les autorités monétaires pour les opérations relatives à la balance des paiements ou la politique monétaire, les entreprises publiques, les fonds de financement des retraites, ou les actifs gérés pour le compte de particuliers.	Oui	Excédents de la balance des paiements/ Opérations de change/ Opérations de privatisation/ Transferts publics/ Surplus fiscaux/ Recettes issues de l'exportation de ressources naturelles	Non précisé	Non précisé	Non précisé

verain doit être détenu par l'Etat. La définition retenue pour la suite de cette thèse est celle du FMI selon laquelle un fonds souverain est un fonds d'investissement détenu par l'Etat, mis en place pour différents objectifs macroéconomiques.

Classification des fonds souverains

La définition ci-dessus peut être complétée pour tenir compte de l'hétérogénéité de ces investisseurs en les classant en fonction de leurs objectifs (IMF (2008)). On peut distinguer cinq types de fonds souverains :

- Les fonds de stabilisation, qui constituent un soutien budgétaire aux chocs de prix des matières premières. Le fonds Russe, *Russian Oil Stabilization Fund* et le fonds Chilien, *Economic and Social Stabilization Fund*, sont des exemples de fonds de stabilisation.
- Les fonds d'épargne pour les générations futures, dont l'objectif est de placer les recettes issues de l'exploitation de ressources non-renouvelables dans un portefeuille d'actifs plus diversifiés et d'atténuer les effets du *Dutch Disease* (Syndrome Hollandais). Le fonds Guinéen, *Fund for Future Generation* est un exemple de fonds d'épargne pour les générations futures.
- Les fonds d'épargne pour les retraites qui fournissent des ressources pour le financement des retraites, comme le fonds Chilien, *Pension Reserve Fund*.
- Les fonds d'investissement d'Etat qui sont généralement composés des excès de réserves de change et dont la stratégie est orientée vers la recherche de rendement financier. Le fonds Coréen, *Korea Investment Corporation* est un exemple de fonds d'investissement d'Etat.
- Les fonds de développement, qui investissent principalement dans des projets à rendement socio-économique élevé ou dans des projets qui peuvent permettre d'accroître la production potentielle du pays. C'est le cas, par exemple, de certains fonds Africains comme *FONSIS* (Sénégal), ou le *Minerals Development Fund* (Namibie).

Un fonds souverain peut poursuivre un ou plusieurs des objectifs ci-dessus.

Littérature

L'ampleur prise par les fonds souverains en a fait un thème de recherche à part entière en finance et en économie. Une partie de la littérature analyse les fonds souverains sous l'angle de l'économie financière et étudie l'impact des investissements des fonds souverains sur la valorisation des entreprises ciblées. Une autre partie de la littérature, s'appuie sur l'économie monétaire et l'économie du développement pour analyser les raisons pour lesquelles les pays créent des fonds souverains. Enfin la majeure partie de la littérature, qui s'inscrit dans le champs de la recherche en économie et en finance internationale, a analysé les déterminants des décisions d'investissement des fonds souverains.

L'impact des investissements des fonds souverains sur les entreprises ciblées

Une partie de la littérature, issue des recherches en économie financière, s'est intéressé à la réaction des marchés suite à une prise de participation par un fonds souverain. De manière générale, les investissements des fonds souverains génèrent des rendements anormaux positifs autour de la date d'annonce (Bortolotti et al. (2010b), Dewenter et al. (2010), Fotak et al. (2008), Kotter & Lel (2011), Ngoc (2015) et Sojli & Tham (2008)). En outre, Kotter & Lel (2011), Bortolotti et al. (2010b) et Ngoc (2015) montrent que ces rendements anormaux sont d'autant plus élevés que le fonds est transparent.

A long terme, les résultats sont plus nuancés. Bortolotti et al. (2010b) and Fotak et al. (2008) trouvent des rendements anormaux à 2 ans négatifs. De la même manière, Dewenter et al. (2010) trouvent des rendements anormaux négatifs à horizon 1 an, mais positifs à horizon 3 ans. Fernandes (2011) montre que les firmes qui ont des fonds souverains parmi leurs actionnaires bénéficient d'une valorisation plus élevée, ce qui suggère un impact positif à long terme des investissements des fonds souverains sur la valorisa-

tion des entreprises.

Par ailleurs, Bortolotti et al. (2010) comparent l'impact des investissements des fonds souverains et des investisseurs privés sur la valorisation des firmes. Ils montrent que les annonces d'investissement par des fonds souverains engendrent des rendements anormaux positifs à court terme, mais d'une ampleur moindre que les annonces de prise de participation par des investisseurs privés. C'est ce qu'ils appellent le "*SWF Discount*".

Les déterminants de la création d'un fonds souverain

Une autre partie de la littérature a analysé quels facteurs influencent la décision de créer un fonds en s'appuyant sur les résultats de la recherche relative à la gestion des ressources naturelles et des réserves de change.

Griffith-Jones & Ocampo (2012) proposent un cadre théorique pour analyser la multiplication du nombre de fonds souverains dans le monde. Selon eux, trois des quatre raisons qui expliquent l'existence d'un surplus du compte courant peuvent justifier la création d'un fonds souverain :

- L'objectif de substitution des richesses : dans ce cas, le surplus du compte courant résulte de l'exploitation d'une ressource non renouvelable. Il s'agit alors de transformer une ressource naturelle non liquide en un portefeuille d'actifs plus ou moins liquides. Dans ce cas, la création d'un fonds souverain semble pertinente.
- Le surplus structurel : ce type de surplus est généré par des pays dont l'économie n'est pas basée sur des ressources naturelles. Il provient d'une forte compétitivité du pays dans la production de biens manufacturés ou d'une forte tendance du pays à épargner. Ce type de situation peut également justifier la création d'un fonds souverain comme cela a été fait par exemple en Asie du Sud Est.
- L'objectif contracyclique : le surplus du compte courant provient ici des variations du volume ou de la valeur des exportations. Dans ce cas, un fonds souverain peut permettre de limiter la surchauffe de l'économie dans les périodes fastes et de contrebalancer l'impact négatif des périodes de faiblesse des prix ou de la conjonc-

ture. Ce type de situation justifie la création d'un fonds de stabilisation comme cela a été fait notamment dans certains pays d'Amérique du Sud.

Deux études empiriques contribuent à identifier les facteurs qui influencent la décision de créer un fonds souverain. Aizenman & Glick (2009) analysent l'effet des caractéristiques pays sur l'existence d'un fonds souverain sur la période 2007-2008. Leurs résultats suggèrent que les pays ayant un excédent du compte courant et les pays spécialisés dans l'exportation de pétrole sont plus susceptibles de créer un fonds. En outre, ils montrent que les pays ayant des institutions politiques plus démocratiques sont moins enclins à créer un fonds souverain. Carpentier & Vermeulen (2014) analysent les déterminants de la création d'un fonds souverain sur la période 1998-2008. Leurs résultats suggèrent que la décision de créer un fonds est liée à l'existence de ressources naturelles et que les fonds souverains sont principalement établis dans des pays autocratiques qui ont des difficultés à trouver des opportunités d'investissement localement.

Malgré la contribution de ces analyses, les périodes étudiées sont trop restreintes ou trop anciennes pour identifier les facteurs qui conduisent un pays à créer un fonds souverain. Le premier chapitre de cette thèse est dans le prolongement de cette littérature.

Les stratégies d'investissement des fonds souverains

Enfin, la majeure partie de la littérature s'inscrit dans le prolongement de la recherche en finance et économie internationale. Elle se focalise sur les stratégies d'investissement des fonds souverains. A travers l'analyse des déterminants des prises de participations des fonds souverains, les chercheurs ont tenté d'apporter des éléments de réponse aux interrogations des Etats : les fonds souverains effectuent-ils leurs investissements selon une logique purement financière ou leurs décisions d'investissement sont-elles biaisées par des objectifs stratégiques ?

D'une manière générale, les caractéristiques de l'entreprise ciblée influencent les prises de participations des fonds souverains. Fernandes (2011), Kotter & Lel (2011) et Aven-
daño (2012) montrent que les fonds souverains préfèrent investir dans des entreprises

de grande taille. Kotter & Lel (2011) trouvent que les entreprises ayant un faible niveau de ROA (rentabilité des actifs) ont plus de chance d'être ciblées par un fonds souverain, ce qui signifie qu'ils investissent dans une perspective de long terme. En outre, certains secteurs sont privilégiés par ces investisseurs. Dyck & Morse (2011) montrent que les fonds souverains ont tendance à investir dans les secteurs de l'énergie, des transports et des télécommunications. Selon Avendaño (2012), c'est le secteur des ressources naturelles qui est privilégié par les fonds souverains. Enfin, les résultats de Chhaochharia & Laeven (2009) suggèrent que les investissements des fonds souverains sont largement orientés vers le secteur pétrolier.

Mais les caractéristiques de l'entreprise ciblée n'expliquent que partiellement les décisions d'investissement des fonds souverains (Avendaño (2012)). Pour Dyck & Morse (2011), le portefeuille des fonds souverains se décompose en deux parties : un portefeuille orienté vers la recherche de profits financiers, et un portefeuille orienté vers l'acquisition d'actifs permettant de contribuer au développement du pays. Ce résultat suggère que les fonds souverains sont susceptibles d'évaluer leurs opportunités d'investissement également sous l'angle du rendement socio-économique. Dès lors, certaines analyses évaluent l'impact des caractéristiques non financières sur les décisions d'investissement des fonds souverains.

Certains auteurs se sont intéressés à l'influence des caractéristiques du fonds et de son pays d'origine. Bernstein et al. (2013) montrent que la gouvernance du fonds influence sa stratégie d'investissement. Les fonds ayant des hommes politiques dans leur conseil d'administration sont plus enclins à effectuer des investissements domestiques alors que les fonds qui s'appuient sur des gestionnaires externes ont plus tendance à effectuer des investissements à l'étranger. Megginson et al. (2013) montrent que les fonds plus anciens ont tendance à investir dans des industries d'importance stratégiques. Par ailleurs, les fonds des pays économiquement développés ont tendance à investir des montants plus élevés. Enfin, plus les marchés financiers du pays du fonds sont développés, moins le fonds souverain aura tendance à investir à l'étranger.

D'autres analyses évaluent dans quelle mesure les caractéristiques du pays ciblé influencent les décisions d'investissement des fonds souverains. Megginson et al. (2013) et Ciarlone & Miceli (2014) montrent que les fonds souverains préfèrent investir dans des pays ayant un niveau de protection des investisseurs élevé. Concernant le niveau de développement économique et financier du pays ciblé, les résultats sont plus contrastés. Megginson et al. (2013) trouvent que les fonds souverains ne concentrent pas leurs investissements dans des pays ayant un niveau de développement ou d'ouverture élevé tandis que Ciarlone & Miceli (2014) montrent que le niveau de développement économique et financier du pays ciblé impacte positivement les investissements des fonds souverains. En outre, Ciarlone & Miceli (2014) montrent que les pays souffrant d'une crise financière ont plus de chance d'attirer les investissements des fonds souverains. Enfin, comme dans la littérature étudiant les investissements directs à l'étrangers, une partie de la littérature sur les fonds souverains s'est attachée à savoir si ces fonds préféreraient investir dans des pays qui ressemblent au leur (modèles de gravité). Chhaochharia & Laeven (2009) et Megginson et al. (2013) montrent que les fonds souverains préfèrent investir dans des pays avec lesquels ils ont une proximité culturelle. Les résultats de Megginson et al. (2013) montrent, en outre, que les fonds souverains préfèrent investir dans des pays qui avec lesquels ils ont des liens commerciaux alors que Chhaochharia & Laeven (2009) trouvent des résultats opposés. Concernant la proximité géographique, si Knill et al. (2012b) montrent que les fonds souverains préfèrent investir dans des pays qui sont proches du leur, les résultats de Megginson et al. (2013) suggèrent le contraire. Enfin, Knill et al. (2012b) mettent en évidence l'importance des relations politiques bilatérales dans la décision d'investissement des fonds souverains. Plus précisément, les fonds souverains préfèrent investir dans des pays avec lesquelles ils ont peu de relations politiques.

On peut voir que l'analyse de la stratégie d'investissement des fonds souverains n'a pas encore abouti à un consensus. La diversité des résultats de ces études peut s'expliquer par l'hétérogénéité des fonds souverains, par le manque d'information disponible sur

certaines de leurs transactions qui rend difficile la constitution d'une base de données fiable ou encore par des problèmes de spécification des modèles économétriques.

Le deuxième et le troisième chapitre de cette thèse sont dans le prolongement de cette littérature.

Objectif de la thèse et questions de recherche

L'objectif de cette thèse empirique est d'analyser plus en détail cet essor des fonds souverains depuis le milieu des années 2000. Elle se concentre d'une part, sur la multiplication du nombre de fonds souverains et d'autre part, sur les déterminants des investissements des fonds souverains. Le premier chapitre de cette thèse se focalise sur les déterminants de la création d'un fonds. Pourquoi a-t-on assisté, depuis une dizaine d'années à une telle multiplication du nombre de fonds souverains ? Le chapitre suivant propose une analyse des déterminants des investissements des fonds souverains. Leur stratégie d'investissement répond-elle à une logique purement financière ou est-elle biaisée par des considérations politiques ? Enfin, le dernier chapitre prolonge cette interrogation en se focalisant sur les déterminants des prises de participations majoritaires par les fonds des pays du Golfe.

Pourquoi les pays créent-ils des fonds souverains ?

Bien que les fonds souverains ne soient pas des investisseurs nouveaux, la dynamique de création de fonds souverains est bien un phénomène récent. En effet, sur les 93 fonds existants en 2017, 57 ont été créés depuis le début des années 2000. Cette dynamique peut s'expliquer, d'une part par l'explosion du prix des matières premières et plus particulièrement la hausse du prix du pétrole. 33 fonds financés par les ressources pétrolières ont en effet été créés entre 2000 et 2017. D'autre part, cette hausse du nombre du fonds souverain peut s'expliquer par l'essor commercial de certains pays en développement qui leurs a permis d'accumuler des excès de réserves de change. C'est le cas par exemple de

la Corée du Sud ou de la Chine qui ont connu une explosion de leurs excédents commerciaux à partir de 2004 et qui ont créé un fonds, respectivement en 2005 et 2007.

Ce tendance à la création de fonds souverains a persisté malgré la faiblesse de la conjoncture économique mondiale et la volatilité des marchés induites par la crise des *subprimes*, la crise de la dette souveraine et la baisse récente du prix du pétrole. 22 nouveaux fonds ont été créés après 2008 et de nombreux fonds sont en cours de création comme en Israël, en Roumanie ou en Inde.

Compte tenu de l'augmentation du nombre de fonds souverains dans le monde et de leur importance croissante dans les pays développés comme dans les pays émergents, l'analyse des facteurs qui influencent la décision de créer un fonds est devenue une thématique de recherche à part entière.

Pour l'heure, seulement deux analyses empiriques (Aizenman & Glick (2009) et Carpannier & Vermeulen (2014)) ont étudié cette problématique. L'une se focalise sur la période 2008-2009, trop restrictive pour comprendre globalement quelles caractéristiques influencent la décision de créer fonds souverains. L'autre propose une analyse plus large (1998-2008) mais laisse de côté les fonds créés après 2008 malgré une conjoncture économique défavorable.

Le premier chapitre de cette thèse est dédié à l'identification des principaux facteurs qui influencent la décision de créer un fonds souverains sur la période 2000-2014. Nous [avec C. Lecourt et V. Kinon] analysons plus précisément si la création d'un fonds est liée à l'accumulation de réserves de change, à la volatilité des prix des matières premières, à la gouvernance du pays et s'il s'agit d'un moyen de lutter contre le *Dutch Disease* et la malédiction des ressources naturelles.

Dans quelle mesure les caractéristiques pays influencent-elles les décisions d'investissement des fonds souverains ?

Du fait de l'expansion rapide des fonds souverains, et des inquiétudes qu'ils suscitent, une partie de la littérature s'est focalisée sur leurs stratégies d'investissement. Certains

auteurs (voir entre autres Megginson et al. (2013), Ciarlone & Miceli (2014), Chhao-chharia & Laeven (2009) et Knill et al. (2012b)) ont mis en évidence l'importance des caractéristiques pays dans les décisions d'investissement des fonds souverains. Les recherches ont également montré que les caractéristiques du fonds impactaient leurs choix d'investissement (Knill et al. (2012b) et Bernstein et al. (2013)). Comme expliqué précédemment, ces analyses n'aboutissent pas à des conclusions unanimes, ce qui peut s'expliquer notamment par des problèmes de modélisation. En effet, les décisions d'investissement des fonds souverains sont le fruit d'un processus complexe. Knill et al. (2012b) et Ciarlone & Miceli (2014) se sont attachés à prendre en compte ces spécificités du processus de décision d'investissement des fonds souverains. En effet, la décision d'investissement peut être décomposée en deux étapes : dans un premier temps le fonds décide d'investir puis il détermine le montant qu'il souhaite investir. Knill et al. (2012b) proposent ainsi d'utiliser un modèle de Cragg (Cragg (1971)) qui permet de prendre en compte cette spécificité. Toutefois, ce modèle estimé en *cross-section* ne permet de prendre en compte ni l'hétérogénéité des fonds, ni la dimension temporelle.

Le deuxième chapitre de cette thèse propose une analyse plus poussée de ce processus d'investissement des fonds souverains à l'aide d'une méthodologie innovante, un modèle Tobit en deux étapes, estimé en panel et qui inclut de la dynamique. Ce modèle a été développé par Chang (2011b) puis amélioré par Xun & Lubrano (2015). Nous [avec B. Candelon, C. Lecourt et Z. Xun] analysons plus précisément quelles caractéristiques pays jouent un rôle dans le processus de décision d'investissement des fonds souverains en vue de savoir si ces fonds agissent comme des investisseurs prudents, comparés aux autres investisseurs institutionnels, en préférant investir dans des pays dans lesquels ils ont un avantage informationnel ou une proximité au niveau macroéconomique, institutionnel ou culturel.

Pourquoi certains fonds prennent-ils des participations majoritaires ?

Dans le prolongement de ce deuxième chapitre, le troisième et dernier chapitre de cette thèse analyse une autre étape de la décision d'investissement des fonds souverains : une fois la décision d'investir prise, quels facteurs déterminent le degré de contrôle que le fonds souhaite ? Ce dernier chapitre vise à identifier les principaux déterminants des prises de participations majoritaires des fonds souverains en analysant plus particulièrement les prises de participations majoritaires des fonds des pays du Golfe. Cette question encore peu explorée par la littérature^f est pourtant d'une importance centrale pour les pays puisque ce sont bien les prises de participations majoritaires qui suscitent le plus d'inquiétudes : *"the prospect of significant investments by SWFs potentially giving foreign countries control over important parts of an investee country's economy has emerged as a political issue"*^g (Greene and Yeager (2008)).

Les fonds des pays du Golfe, par leur puissance financière, l'ampleur des participations qu'ils prennent à l'étranger et le caractère autocratique de leurs institutions politiques sont des investisseurs qui inquiètent tout particulièrement. Ces fonds gèrent en effet plus de 40% des actifs détenus par l'ensemble des fonds souverains et ont effectué un nombre important d'acquisitions majoritaires ces dix dernières années. Un exemple emblématique est l'acquisition du club de football Paris Saint-Germain par le fonds *Qatar Investment Authority*.

Enfin, se focaliser sur les fonds des pays du Golfe permet de pallier le problème d'hétérogénéité des fonds souverains mentionné précédemment. En effet, ces fonds présentent certaines caractéristiques communes qui permettent de les considérer comme un groupe homogène d'investisseurs. Tout d'abord, ils sont financés par les revenus générés par l'exploitation des matières premières (principalement du pétrole). Ensuite, ils sont considérés comme des investisseurs peu transparents. Enfin, ils ont été établis par des pays

f. Il n'y a actuellement aucun papier publié qui analyse les déterminants des prises de participations majoritaires par les fonds souverains.

g. [traduction] La perspective de prises de participations significatives par les fonds souverains, donnant potentiellement à des pays étrangers un contrôle sur certains éléments importants de l'économie nationale, est devenue une préoccupation politique.

aux institutions politiques similaires.

L'objectif de ce troisième chapitre est donc d'identifier les déterminants de la stratégie d'investissement des fonds souverains des pays du Golfe qui comptent parmi les plus puissants du monde. Plus précisément, nous cherchons à déterminer si ces fonds prennent des participations majoritaires à l'étranger pour des raisons autres que financières. Pour se faire, nous analysons si les caractéristiques identifiées par la littérature pour expliquer les investissements des fonds souverains s'appliquent dans le cas de prises de participations majoritaires par les fonds des pays du Golfe.

Acquisition des données

Le principal défi de la recherche sur les fonds souverains réside dans l'acquisition des données. Au début de cette thèse, la possibilité d'acquérir des données fiables et complètes était la principale barrière. En effet, s'il existe des bases de données sur les investissements des fonds souverains, l'absence de consensus sur leur définition^h ainsi que l'opacité des méthodologies utilisées ont justifié d'investir du temps sur la constitution d'une base de données dont la méthode est explicitée dans cette section.

Liste des fonds souverains et de leurs filiales

La première étape de la constitution de cette base de données a été de déterminer une liste de l'ensemble des fonds souverains à l'aide de différentes sources. J'ai d'abord utilisé la liste du SWF Institute que j'ai ensuite complétée avec les listes publiées par JP Morgan (Fernandez & Eschweiler (2008)), Catalano (2009), Lyons (2007), les études ESADEgeo publiées chaque année sur les fonds souverains ainsi que des articles de presse. J'ai ensuite utilisé les sites internet des fonds pour éliminer les doublons.

La deuxième partie de ce travail a consisté à analyser l'ensemble des définitions de la littérature afin de déterminer si chacun des fonds de cette première liste devait ou ne

h. La liste des fonds souverains diffère d'une base de données à l'autre.

devait pas être considéré comme un fonds souverain. La définition adoptée est celle du FMI (IMF (2008)) car elle présente le double avantage d'être assez large pour inclure l'ensemble des fonds considérés unanimement comme des fonds souverains, et de pouvoir être complétée au besoin par les objectifs des fonds.

J'ai ensuite passé en revue chacun des fonds de la liste pour vérifier qu'ils rentrent bien dans le champs de cette définition selon laquelle les fonds souverains sont des fonds d'investissements d'Etat, établis pour des objectifs macroéconomiques. Cette recherche a aboutit à une liste de 93 fonds souverains en place en 2017 à travers le monde.

Afin de pouvoir affiner mes analyses, j'ai complété cette liste de fonds souverains par une recherche sur leurs caractéristiques sur les sites internet des fonds. La base de données inclut les informations suivantes : i) taille du fonds (actifs gérés) ; ii) présence d'hommes politiques au Conseil d'Administration ; iii) recours à des managers externes ; iv) indice de transparence Linaburg-Maduell ; v) objectif(s) affiché(s) du fonds.

De nombreux fonds passent par des filiales détenues à 100% pour effectuer leurs transactions comme ce fut le cas par exemple du fonds Qatari, *Qatar Investment Authority*, qui a acquis 17% de l'entreprise allemande Volkswagen en 2009 via sa filiale *Qatar Holding* et 70% club de football Paris Saint-Germain en 2011 via sa filiale *Qatar Sport Investment*. Ainsi, la seconde étape de la constitution de cette base de données a été d'établir, pour chacun des fonds, la liste de ses filiales détenues à 100%. Pour cela j'ai utilisé les sites internet des fonds, la base de données Thomson Reuters Eikon et la base de données Orbis.

Liste des prises de participations des fonds souverains

Une fois la liste de fonds et de leurs filiales établie, j'ai recherché l'ensemble des investissements dans des entreprises effectuées par les fonds souverains entre 1989 et 2015ⁱ sur la base de données Thomson Reuters Eikon Fusions et Acquisitions. Malheureuse-

i. Cette base de données n'inclut ni les investissements en immobilier ni les opérations de désinvestissement.

ment, cette base de données ne m'a pas permis de retrouver l'ensemble des transactions effectuées sur la période. J'ai donc ensuite établi une liste de mots clés permettant de compléter mes recherches sur la base de données Factiva. Pour chaque transaction trouvée, il a fallut vérifier qu'elle avait bien été effectuée et qu'il ne s'agissait pas d'une rumeur. Cette recherche m'a permis de compléter la base de données pour obtenir 1422 transactions effectuées par 45 fonds souverains de 26 pays différents. Pour chaque transaction, les informations suivantes ont été recueillies : i) nom du fonds souverain ; ii) nom de la filiale le cas échéant ; iii) nom de l'entreprise ciblée ; iv) secteur de l'entreprise ciblée ; v) date de la transaction ; vi) part détenue avant la transaction ; vii) part acquise ; ix) montant de la transaction lorsque celui-ci était disponible^j.

j. Malgré les efforts déployés pour constituer cette base de données, la recherche sur les fonds souverains se heurte nécessairement à l'opacité de certains fonds qui ne divulguent pas toujours les détails de leurs investissements.

General introduction

Sovereign wealth funds (SWFs), which are public investment vehicles that manage part of States' wealth are receiving increasing attention since the late 2000s. The assets managed by these funds have jumped from USD 500 million in 1995 (Ciarlone & Miceli (2014)) to USD 7.3 trillion in 2017 (SWF Institute), being an average growth of 13% per year. In addition, the number of SWFs has grown steadily over the past 15 years. 43 new funds have been created since 2005, to reach 93 SWFs worldwide in 2017.

While SWFs were not born with the subprime crisis, their media coverage increased in 2007-2008 because they made significant investments in some of the world's leading financial institutions, such as Citigroup, Morgan Stanley or Barclays Bank.

This growing financial power of SWFs, coupled with high-profile equity investments, raised concerns especially in developed countries : *"the fear is that these so-called sovereign wealth funds could destabilize markets or provoke a political backlash"* (*"A fear of foreign investments"*, The New York Times, August 21 2007). These fears focus mainly on the impact of SWFs on financial markets' stability and on their investment strategy : Are SWFs' motives comparable to institutional investors' ? Are SWFs investments driven by the search for financial return or do they pursue more strategic objectives ? May SWFs investments destabilize financial markets or on the contrary, do they have a countercyclical effect ?

The opaqueness surrounding some funds bring these concerns out. The transparency index^a of the Saudi fund, SAMA Foreign Holding, 5th biggest fund in terms of assets under management, and the Chinese fund, SAFE Investment Company, 7th biggest fund, is indeed 4 out of 10. The index of the Qatari SWF, Qatar Investment Authority (USD 320 billion in assets under management), the Chinese fund, National Social Security Fund (USD 295 billion) and the Emirati fund, Investment Corporation of Dubai is 5 out of 10.

These concerns have encouraged the development of an extensive literature. Since the term "Sovereign Wealth Funds" was first used in 2005 (Rozanov (2005)), more and more research is being done to understand these investors and answer the questions they raise. To date, SSRN returns 429 results for the term "Sovereign Wealth Funds".

The remainder of this introduction is organized as follow : after a first section that describes the recent development of SWFs, I detail the main definitions of SWFs. Then, I present the key findings of the literature and introduce the research questions addressed in this dissertation. Finally, as the empirical research on SWFs has to face the problem of data availability and reliability, I present in the last section, the methodology used to collect the data needed to conduct an empirical research in this field.

Why have SWFs become a hot topic ?

The increasing financial power of SWFs

SWFs have been highlighted by the subprime crisis but they were not born with it. Some funds, among the most powerful, have been created in the 1970s, such as Abu Dhabi Investment Authority, created in 1976, or the Singaporean fund, Temasek Holdings, created in 1974. However, they have been on the rise since the beginning of the

a. The Linaburg-Maduell transparency index was developed at the SWF Institute by C. Linaburf and M. Maduell. It assesses the level of transparency of SWFs on a scale of 1 to 10. The higher the index, the more transparent the SWF. For more details about this index, see : <http://www.swfinstitute.org/statistics-research/linaburg-maduell-transparency-index/>.

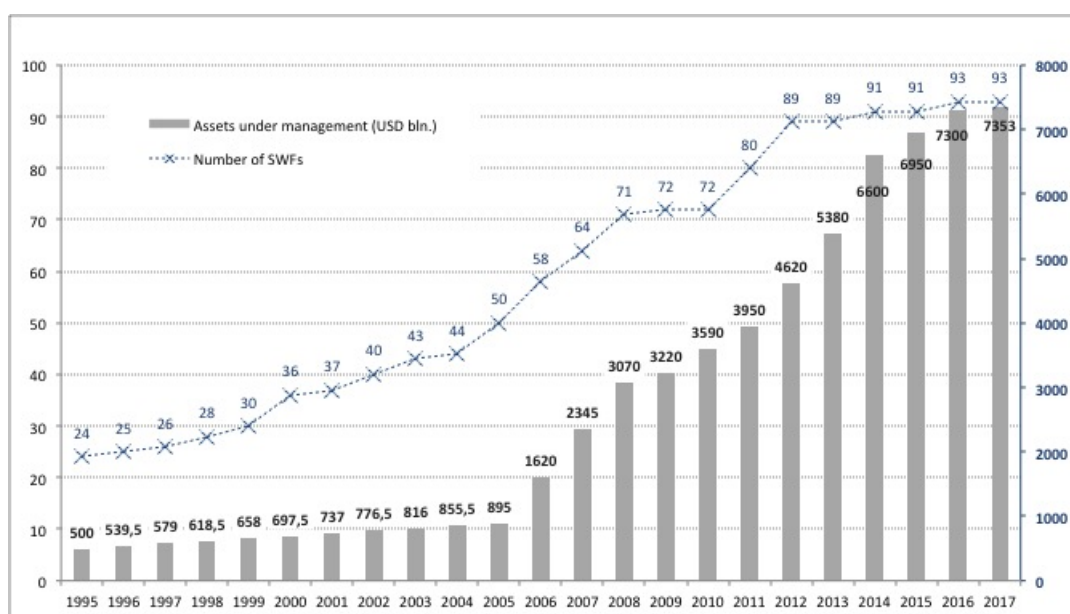


Figure 0.2. – **Evolution of SWFs (number of funds and assets under management)**

Sources : Preqin reports, SWF institute, Rozanov (2005), Author's database

2000s as illustrated by figure 0.2. The number of SWFs has grown quickly these last 15 years : 75% of the existing 93 SWFs in 2017 were established after 2000. This trend sped up between 2004 and 2012 with 46 new funds created over this period. Despite the slowdown in SWFs creation since 2012 (only 4 SWFs were created between 2012 and 2017), this trend looks set to continue as many new funds are being created, for example in Israel, Bangladesh or India.

Furthermore, the assets managed by SWFs have increased sharply since the mid-2000s, driven by the rise in oil prices and trade surplus in Asia. The annual average growth of SWFs assets under management was 19% per year over the period 2005-2017. Since 2014, consequently to the fall in oil prices, the increase in assets managed by SWFs has slowed down (+10% between 2014 and 2017). The financial power of SWFs is estimated to be USD 7.3 trillion in 2017 (SWF Institute).

SWFs are investors that raise concerns

The recent financial crisis has highlighted the increasing financial power of SWFs. They have indeed invested between 60 and 92 billion dollars in 2007 and 2008 (Mezzacapo (2009)). The Chinese fund, China Investment Corporation (CIC), acquired 9.9% of Morgan Stanley ; Temasek Holdings (Singapore), Qatar Investment Authority and CIC acquired 15% of Barclays Bank ; GIC (Singapore) and Abu Dhabi Investment Authority (United Arab Emirates) invested USD 15.4 billion in Citigroup.

In response to these significant investments in major financial institutions, Hilary Clinton declared in January 2008 : *"We need to have a lot more control over what they [sovereign-wealth funds] do and how they do it"*.^b At the same time, *The Economist* ran *"Invasion of sovereign wealth funds"* as a headline^c on a cover with military helicopters displaying the flags of Kuwait, Singapore and South Korea loaded with gold bullion. These are revealing examples of the concerns SWFs raise, mainly in developed countries. These fears may be summarized as follows :

- What is the impact of these investors' financial power on financial markets ? Are SWFs a destabilizing force for financial markets (speculative bubbles, massive shares sales,...) or as long term investors, do they on the contrary stabilize them ?
- What is the impact of SWFs on the performance of the firms they invest in ? The acquisition of a firm by a SWF raises the question of the status of these firm : is it a private or a public company ? The literature underlines indeed the negative impact of public ownership on corporate financial performance (Boubakri & Cosset (2010b) and Lin & Bo (2012)).
- Are SWFs investments a new kind of protectionism ? SWFs may indeed support local economy by making domestic investments, which would be an obstacle to free competition.
- Finally, the main concern is related to the investment strategy of SWFs. Because

b. H. Clinton - The Democratic Debate in Las Vegas - January 15 2008.

c. "Invasion of sovereign wealth funds", *The Economist*, January 17 2008.

these investors are responsible for managing the wealth of States, we can wonder if they only seek financial return or if their investments are biased by more strategic objectives. According to Aglietta (2014), SWFs *"are linked to the budget of the government through two-way transfers : feeding the revenue of the government and getting capital inflow from the government. Therefore it is absurd to pretend that SWFs should not resort to strategic actions. They are strategic by their very own nature"*.

The opaqueness surrounding some SWFs deepens these concerns

These concerns feeds on the lack of transparency of some funds. According to the Group of 22 (1998), *"transparency contributes to the efficient allocation of resources, (...) helps to inform market expectations, thereby helping to stabilise markets during periods of uncertainty and also contributing to the effectiveness of announced policies"*. In order to enhance the transparency of SWFs, some of them have created a working group dedicated to promote transparency among SWFs, the International Working Group on Sovereign Wealth Funds. They drafted the Santiago Principles (2008), which consist in 24 generally accepted principles and practices to enhance SWFs transparency and governance. Truman (2007) who has created a set of tools to evaluate SWFs' level of transparency estimates that a fund that meets all the Santiago Principles would get 74 out of 100 with his own grid.

However, the Santiago Principles do not recommend to release the amount of the assets under management, nor annual reports and financial statements. This lack of transparency of some funds led to the establishment of stricter regulations of foreign investments in some developed countries. In 2009, the German government set up an *ex-post* transaction control system for foreign investments if they represent a risk for "public order" or "national safety". In the United States, the Foreign Investment and Security Act (2007) states that *"if the Committee determines that the covered transaction is a foreign government controlled transaction, the Committee shall conduct an investigation of the*

transaction" (Bertin-Delacour (2009)). More recently, the European Commission passed a regulation that forces SWFs to be more transparent when they acquire majority stakes in European firms.^d

What is a sovereign wealth fund ?

The many ways to define SWFs

Although SWFs have become major financial actors, there is no consensus on what should or shouldn't be considered as a SWF. This may be explained by the heterogeneity of this group of investors which gathers very different state owned investment funds. The Norwegian fund, Government Pension Fund - Global, which is very transparent concerning its objectives and its investment strategy, and manages USD 900 billion, is not comparable to the Kiribati islands' fund, Revenue Equalization Reserve Fund, which is very opaque (transparency index : 1/10) and manages USD 0.6 billion. Table 0.2, which summarize the main definitions of SWFs used in the literature, illustrates this lack of consensus on how to define a SWF.

Relying on the definition of the FEEM - Monitor Group (2008) implies to exclude the Saudi SWF, SAMA Foreign Holdings, 5th largest fund in terms of assets under management (USD 514 billion in 2017 according to the SWF Institute) and the Chinese fund, SAFE Investment Company, 7th largest fund (USD 441 billion).

The Santiago Principles' definition excludes also some major SWFs such as SAMA Foreign Holdings, Mubadala Investment Company (Abu Dhabi) which manages USD 125 billion or Samruk-Kazyna (Kazakhstan) which manages more than USD 60 billion.

The definition of the US Treasury (Lowery (2007)) states that a SWF is funded by foreign exchange assets which is not the case of Temasek Holdings, one of the world's major SWFs.

Then the only common feature between these definitions is the State ownership of

d. Regulation C(2017) 4644 of 11.7.2017 supplementing Directives 2004/39/EC and 2014/65/EU.

SWFs. The definition adopted in this dissertation is the one of the International Monetary Fund (IMF) according to which, "*SWFs are government-owned investment funds, set up for a variety of macroeconomic purposes*" (IMF (2008)).

SWFs objectives

The above definition may be supplemented in order to take into account the heterogeneity of these investors. The IMF augment it with a classification system to clearly describe the different types of SWFs within its universe. It identifies five types of SWFs :

- Stabilization funds aim to offset cyclical shocks. Most of them are commodity funds that mitigate fluctuations in commodity prices. For example, the Russian Oil Stabilization Fund and the Chilean Economic and Social Stabilization Fund are stabilization funds.
- Saving funds for future generations aim to transform non-renewable resources into a diversified portfolio of financial assets and to mitigate the effects of the Dutch Disease. An example of such a fund is the Guinean Fund for Future Generations.
- Pension funds are SWFs dedicated to the financing of the pensions such as the Chilean Pension Reserve Fund.
- Reserve investment funds pursue a strategy geared towards the acquisition of interests in various entities, mainly abroad, such as the Korean fund, Korea Investment Corporation.
- Development funds are established to support the domestic economy. They invest predominantly in high socio-economic return projects or in projects that may increase the production capacity of the country. Such funds have been created for example in Africa (FONSIS in Senegal and the Minerals Development Fund in Namibia).

A SWF may pursue one or more of the above objectives.

Table 0.2. – SWFs : some definitions

Reference	Definition	Criteria				
		Ownership	Funding	Management	Liabilities	Investment strategy
Rozanov (2005)	SWFs are sovereign-owned asset pools, which are neither traditional public-pension funds nor reserve assets supporting national currencies.	State	Not individuals or employers contribution	Unspecified	Unspecified	Unspecified
Lowery US Treasury	Government investment vehicle which is funded by foreign exchange assets, and which manages those assets separately from official reserves.	State	Foreign exchange assets	Independant from other financial institutions	Unspecified	Unspecified
IMF (2008)	SWFs are government-owned investment funds, set up for a variety of macroeconomic purposes.	State	Unspecified	Unspecified	Unspecified	Unspecified
Jen (2007)	Five characteristics : i) sovereign ; ii) high foreign currency exposure ; iii) no explicit liabilities ; iv) high risk tolerance ; v) long investment horizon	State	Unspecified	Unspecified	No explicit liabilities	High risk tolerance/ long term investment horizon
Santiago Principles (2008)	SWFs are defined as special purpose investment funds or arrangements, owned by the general government. Created by the general government for macroeconomic purposes, SWFs hold, manage or administer assets to achieve financial objectives, and employ a set of investment strategies which include investing in foreign financial assets. The SWFs are commonly established out of balance of payments surpluses, official foreign currency operations, the proceeds of privatizations, fiscal surpluses, and/or receipts resulting from commodity exports.	State	Balance of payment surpluses/ official foreign currency operations/ the proceeds of privatization/ fiscal surpluses/ receipts resulting from commodity exports	Unspecified	Unspecified	Achieve financial objectives
FEEM - Monitor Group (2008)	A Sovereign Wealth Fund is an investment fund that meets five criteria : i) it is owned directly by a sovereign government ; ii) it is managed independently of other state financial institutions ; iii) it does not have predominant explicit pension obligations ; iv) it invests in a diverse set of financial asset classes in pursuit of commercial returns ; v) it has made a significant proportion of its publicly-reported investments internationally	State	Unspecified	Independant from other financial institutions	No explicit liabilities	Investment strategy led by the search for commercial return
SWF Institute	A Sovereign Wealth Fund is a state-owned investment fund or entity that is commonly established from balance of payment surpluses, official foreign currency operations, the proceeds of privatizations, governmental transfer payments, fiscal surpluses, and/or receipts resulting from resource exports. The definition of SWFs excludes, among other things, foreign currency reserve assets held by monetary authorities for the traditional balance of payments or monetary policy purposes, state-owned enterprises in the traditional sense, government-employee pension funds, or assets managed for the benefit of individuals.	State	Balance of payment surpluses/ official foreign currency operations/ the proceeds of privatizations/ governmental transfer payments/ fiscal surpluses/ receipts resulting from resource exports.	Unspecified	Unspecified	Unspecified

Literature

The rise of SWFs encouraged the development of a specific literature in various fields of research in finance and economics. Part of this literature studies the impact of SWFs investments on market valuation of targeted firms. Another part of the literature focus on the determinants of SWFs creation. Finally, most of this literature analyzes the determinants of SWFs investments.

What is the effect of SWFs investments on targeted firms' market valuation ?

Part of the literature focus on market response to a SWF investment announcement. Overall, results suggest that SWFs investments generate positive abnormal announcement period returns (Bortolotti et al. (2010b), Dewenter et al. (2010), Fotak et al. (2008), Kotter & Lel (2011), Ngoc (2015) and Sojli & Tham (2008)). Moreover, Kotter & Lel (2011), Bortolotti et al. (2010b) and Ngoc (2015) show that the more transparent the SWF, the higher these abnormal returns.

In the long-run, results are less unanimous. Bortolotti et al. (2010b) and Fotak et al. (2008) find negative abnormal returns after 2 years. In line with this finding, Dewenter et al. (2010) find negative abnormal returns after 1 year, but positive after 3 years. Fernandes (2011) show that firms in which SWFs are shareholders benefit from a higher market valuation, suggesting a positive market reaction of SWFs investments in the long-run.

Furthermore, Bortolotti et al. (2010) compare markets' reaction to news of a SWFs investment with the reaction following announcement of investments made by other similar privately-owned institutional and corporate investors. They show that SWFs investments do generate abnormal returns around the announcement date, but to a lesser extent than privately-owned investors. They call it the "*SWF Discount*".

Why do countries create SWFs ?

Another part of the literature, in the fields of natural resources management and excess reserves management, aims to identify the main factors driving the creation of SWFs.

Griffith-Jones & Ocampo (2012) develop a theoretical framework to better understand the increase in the number of SWFs. They show that three of the four reasons why a country may have a current account surplus justify the creation of a SWF :

- *The wealth substitution motive* : in this case, the current account surplus comes from the exploitation of a non-renewable resource. The country transforms an illiquid natural resource into a portfolio of foreign assets, which may be more or less liquid.
- *The resilient surplus motive* : this type of structural surplus is specific to non-natural resources based economies. It comes from the competitiveness of the country in the production of tradable goods and services or from the ability of the country to have high levels of savings.
- *The counter-cyclical motive* : the current account surplus comes from the cyclical variations in the volume and/or value of exports. In this case, establishing a SWF may counterbalance the overheating of the domestic economy in booming times and on the contrary, limit the negative impact of low prices or a poor economic situation. Some South American countries established SWFs for this purpose.

Two empirical studies focus on the drivers of SWFs creation. On a sample of SWFs created in 2007 and 2008, Aizenman & Glick (2009) analyze what country level characteristics influence the creation of SWFs. Their results suggest that countries with current account surplus and countries specialized in oil export are more likely to create a SWF. Moreover, they show that countries with a democratic political regime are less likely to create such a fund. Carpentier & Vermeulen (2014) analyze the drivers of SWFs creation over the enlarged period 1998-2008. Their results suggest that the decision to establish

a fund is linked to the presence of natural resources in the country and that SWFs are mainly established in autocratic countries for which it may be difficult to find domestic attractive investment opportunities.

Despite the contribution of these analysis, the periods studied are too limited or too old to identify the drivers of SWFs creation. The first chapter of this dissertation is in line with this literature.

Investment strategies of SWFs

Finally, most of the literature, in line with research in international finance and economics, addresses the main concern raised by SWFs : is SWFs investment strategy guided by pure financial motives or is it biased by more strategic objectives ? To understand this question, some papers aim to identify the main drivers of SWFs investments.

Some authors show that firm level characteristics influence investment decisions of SWFs. Fernandes (2011), Kotter & Lele (2011) et Avendaño (2012) find that SWFs are more prone to invest in large firms (in terms of total assets). Kotter & Lele (2011) find that firms with a low level of ROA (return on assets) are more likely to be targeted by a SWF, which means that they are investing in a long-term perspective. Furthermore, SWFs seem to target some specific sectors. Dyck & Morse (2011) find that they invest mostly in the energy, transport and telecommunication sectors. Avendaño (2012) show that SWFs investments are more likely to invest in the natural resources sector. Chhaochharia & Laeven (2009) find that they are more likely to invest in oil companies.

However, SWFs stock selection is not only determined by firm-level characteristics (Avendaño (2012)). Dyck & Morse (2011) show that SWFs portfolios are divided into two parts : a portfolio oriented toward financial returns and a portfolio oriented toward the development of their countries, indicating that investment decisions of SWFs are distorted by considerations other than financial. Then, some authors assess whether SWFs investments are driven by non-financial characteristics.

Some of them focus on the acquirer's characteristics (governance of the fund, country-

level variables) to explain SWFs investment decisions. Bernstein et al. (2013) show that the governance of the fund influences its investment choices. SWFs in which politicians are involved are more likely to make domestic investments whereas SWFs that rely on external managers are more prone to make cross-border investments. Megginson et al. (2013) show that the older the SWF is, the more it invests in strategic industries. They also find that SWFs established in developed countries tend to invest higher amounts. Finally, the more developed financial markets of the acquirer country are, the less the fund invest abroad.

Other papers focus on the target countries characteristics to explain SWFs investment decisions. Megginson et al. (2013) and Ciarlone & Miceli (2014) show that SWFs rather invest in countries with a high level of investors' protection. Concerning the effect of the targeted country economic and financial development, results are more contrasted. Megginson et al. (2013) find no significance of the economic and financial development of the targeted country to explain SWFs investment decisions whereas Ciarlone & Miceli (2014) find an opposite result. Furthermore, Ciarlone & Miceli (2014) show that countries that are experiencing a financial crisis are more likely to attract SWFs investments. Finally, relying on the literature on Foreign Direct Investments (FDI), some papers test if SWFs are more likely to invest in countries that are close to their in terms of culture, economic development or political institutions (gravity models). Chhaochharia & Laeven (2009) and Megginson et al. (2013) show that SWFs rather invest in countries that share a similar culture. For other variables, results are more contrasted. Megginson et al. (2013) find that SWFs are more prone to invest in countries that are trade partners whereas Chhaochharia & Laeven (2009) find opposite results. Knill et al. (2012b) find that SWFs prefer to invest in countries that are close to their (in terms of geographic distance) while Megginson et al. (2013) find that geographic proximity doesn't explain SWFs investment decisions. Finally, Knill et al. (2012b) show that SWFs are more likely to invest in countries with which they have weak political bilateral relations.

The results detailed above highlight the lack of consensus regarding the drivers of SWFs

investments. The heterogeneity of SWFs, the unavailability of data on some of their transactions or specification problems may explain the variety of these results and pave the way to new research projects. The second and third chapters of this dissertation are in line with this part of the literature.

Objectives of the dissertation and research questions

The main objective of this empirical dissertation is to analyze the rise of SWFs since the mid-2000s. It focus, on the one hand, on the determinants of SWFs creation, and, on the other hand, on the determinants of SWFs investments. The first chapter contributes to explain why the number of SWFs has grown sharply for the last 15 years. The second chapter analyzes the decision-making process of SWFs investments. The third and last chapter extends this analysis by focusing on the drivers of majority acquisitions made by Gulf countries SWFs.

Why do countries establish SWFs ?

Although SWFs are not new, the number of new funds created since the beginning of the 2000s makes it a recent phenomenon. 57 of the 93 existing funds in 2017 were created since the beginning of the 2000s. This trend may be explained first, by the rise in commodity prices, and specifically oil prices. 33 SWFs funded by commodity revenues were established over the period 2000-2017. Another reason that may explain this increasing number of SWFs over the world is the excess reserves accumulated by some developing countries. The Korean and Chinese trade surplus, for example, shot up since 2004 and encouraged these countries to set up SWFs.

This trend remains despite difficult economic conditions and market volatility resulting from the subprime crisis, the debt crisis and the recent decrease in oil prices. 22 new SWFs were created after 2008 and many funds are planned to be established (in Israel, Roumania and India among other countries).

Considering the increasing number of SWFs in the world and their growing financial power in both developed and developing countries, it seems necessary to better understand the reasons why countries decide to set up such funds.

To date, only two empirical analysis (Aizenman & Glick (2009) et Carpentier & Vermeulen (2014)) address this issue. The first one analyzes the determinants of SWFs creation over the period 2008-2009, which is too restrictive to fully understand why a country decides or should decide to set up a fund. The other analyzes this issue over a larger period (1998-2008) but don't take into account the SWFs created after 2008, in spite of bad economic conditions. The first chapter of this dissertation deepen the analysis of SWFs creation using a novel database over the enlarged period 2000-2014. More precisely, we [with C. Lecourt and V. Kinon] test if the creation of a SWFs comes from excess exchange reserves, commodity prices volatility, the governance of the country and if it is a way to mitigate Dutch Disease and the natural resources curse.

Are SWFs investments driven by country-level factors ?

Because of the increasing financial power of SWFs and the concerns they raise, part of the literature is dedicated to analyze SWFs investment strategies. Some authors (see Megginson et al. (2013), Ciarlone & Miceli (2014), Chhaochharia & Laeven (2009) and Knill et al. (2012b) among others) show that country level characteristics contribute to explain SWFs investment decisions. Some papers also show that their investment decisions may be explained by the characteristics of the funds (Knill et al. (2012b) and Bernstein et al. (2013)). These analyzes do not lead to unanimously accepted conclusions, which may be explained by the complexity of the decision-making process of SWFs which leads to imperfect econometric specifications. Knill et al. (2012b) and Ciarlone & Miceli (2014) show that the investment decision of SWFs may be thought of taking place in two stages : first the fund decides to invest, and then it decides how much it will invest. Knill et al. (2012b) use a Cragg model (Cragg (1971)) that allows to take into account this complex decision-making process. Unfortunately, they run a cross-sectional analysis

that cannot take into account the heterogeneity of SWFs, or the temporal dimension.

The second chapter of this dissertation extends this analysis using a new methodology. We [with B. Candelon, C. Lecourt and Z. Xun] estimate a two-tiered Tobit model with a dynamic component, using panel data. This model was first developed by Chang (2011b) and improved by Xun & Lubrano (2015). More precisely we analyze if country level factors drive investment decisions of SWFs. We test whether SWFs act as prudent investors compared to other institutional investors, investing predominantly in countries in which they have an informational advantage or a macroeconomic, institutional or cultural proximity.

Why do some SWFs take majority cross-border stakes ?

In line with the second chapter, the third and last chapter of this dissertation analyzes another step of SWFs investment decision : once the decision to invest has been taken, what are the factors driving the degree of control the fund wants ? This last chapter aims at identifying the determinants of majority acquisitions of SWFs by focusing on majority acquisitions made by Gulf countries SWFs. This issue have been little studied^e while it is precisely majority acquisitions that raise concerns : *"the prospect of significant investments by SWFs potentially giving foreign countries control over important parts of an investee country's economy has emerged as a political issue"* (Greene and Yeager (2008)).

Gulf countries SWFs are among the most powerful SWFs (they manage indeed more than 40% of the assets held by all SWFs), they take many large stakes abroad (an emblematic example is the full acquisition of the French football club, Paris Saint Germain, by Qatar Investment Authority), and they have similar political institutions. For these reasons, they are investors that raise concerns.

Moreover, restricting the analysis to Gulf countries SWFs allows to limit the problem associated with the heterogeneity of this group of investors. Gulf countries SWFs share

e. For now, there is no published empirical paper investigating the determinants of majority acquisitions by SWFs.

indeed common characteristics that allow them to be considered as a homogeneous group of investors. First, they are funded by commodity revenues (mainly oil). Second, they are considered as opaque investors. Finally, they have been established by countries with similar political institutions.

This last chapter aims to identify the drivers of Gulf countries SWFs investment strategy. More precisely, we test if the determinants of SWFs investments identified in the literature stand in the case of majority acquisitions by Gulf countries SWFs, in order to figure out if these fund take majority stakes for reasons other than financial.

Data acquisition

The main challenge research on SWFs has to face is the acquisition of data. When I began this dissertation, I had to find a way to acquire reliable and complete data. There are databases on SWFs investments, but there is no consensus on the definition of SWFs^f and the methodologies used are not very transparent. Then, I decided to construct a database from scratch. This section details the methodology I used.

List of SWFs and their subsidiaries

First, I conducted a search of all existing SWFs using different sources in order to have the most complete list. I started with a preliminary sample of SWFs given on the SWF Institute website. I then completed it with the names of funds published by JP Morgan (Fernandez & Eschweiler (2008)), Catalano (2009), Lyons (2007), ESADEgeo studies on SWFs published every year and news articles. When different names for the same SWF were found, I employed the fund's websites to eliminate duplicates. Then, I analyzed the definitions of SWFs given in the literature to figure out if the funds of this list should or should not be considered as a SWFs. The definition used in this database is the IMF's (IMF (2008)) because it has the two following advantages : i) it is large enough to in-

f. The list of SWFs varies from a database to another.

clude most powerful SWFs ; ii) it can be completed with the funds' objective(s).

I then analyzed each fund on the list to determine if they could be considered as SWFs according to this definition. This search yielded a sample of 93 SWFs established in 2017.

I completed this list with the funds' characteristics (SWFs websites). The following information are included in the database : i) size of the fund (assets under management) ; ii) presence of politicians on the board ; iii) reliance on external managers ; iv) Linaburg-Maduell transparency index ; v) declared objective(s) of the fund.

Many funds use wholly-owned subsidiaries to achieve their transactions. The Qarari fund, Qatar Investment Authority, acquired 17% of the German company, Volkswagen in 2009 through its subsidiary Qatar Holding, and 70% of the football club Paris Saint Germain through Qatar Sport Investment. It justified to invest more time to complete the SWFs list with their wholly-owned subsidiaries. I used two financial databases, Thomson Reuters Eikon and Orbis.

List of SWFs transactions

In order to find SWFs transactions over the period 1989-2015, I first used Thomson Reuters Mergers and Acquisitions database.⁸ Unfortunately, this database was incomplete. So that, I completed the missing acquisitions by using the online database Factiva. For each transaction, I had to check if it had been completed and if it was not a rumor. The database gathers informations about 1422 transactions made by 45 SWFs from 26 different countries. It includes the following data items : i) name of the fund ; ii) name of the subsidiary if necessary ; iii) name of the targeted firm ; iv) sector of the target ; v) transaction date ; vi) pre transaction share ; vi) acquired share ; vii) post transaction share ; viii) amount of the transaction when disclosed.

g. This database includes neither real estate investments, nor disinvestments.

Determinants of the Emergence of New SWFs

This paper is a joint work with C. Lecourt and V. Kinon.

Abstract

The aim of the paper is to shed light on the question of why a country decides to set up a sovereign wealth fund (SWF), and more precisely, why a country decides to set up a specific type of SWF. Since the beginning of the 2000's, more and more funds have indeed been created, in spite of the recent financial crisis, but we know little about the reasons why more and more countries have decided to set up such funds. Using a sample of 37 countries that created at least one SWF over the period 2000-2014, we test if the emergence of these new recent funds can be explained by the following factors : i) the excess foreign exchange reserves ; ii) the volatility of commodity prices ; iii) the will to mitigate the "Dutch Disease" effects and ; iv) the governance of the country. Our results indicate that countries with excess reserves, which are dependent on a commodity and which suffer from an appreciation of the real exchange rate are more likely to create a fund. We also find that there is a political dimension in SWFs creation as corrupted countries are more prone to establish a SWFs. Finally, our results suggest that the factors driving SWFs creation are different depending on the origin of the funding (commodity or non-commodity) and the objective(s) assigned to the fund.

Keywords : Sovereign Wealth Funds ; Natural Resources Rents ; Country Factors ; Logit Panel Model

JEL classification : E21 ; E61 ; G23 ; F39 ; H59 :

“Modern Sovereign Wealth Funds are not new. The first, the Kuwait Investment Office, was set up in 1953 just as Edmund Hillary and Tenzing Norgay were setting out to climb Mount Everest. The number of funds has been increasing since then like the traffic on the slopes of Everest” (John Gieve, former deputy Governor of Bank of England in a speech in London, 2008).

1.1. Introduction

May the constitution of a Sovereign Wealth Fund (SWF) be considered as a new phenomenon? Over the past decade, more SWFs have been created than ever before and more than the previous 50 years put together. According to the SWF Institute 26 SWFs were created before 2000, investing state-owned profits proceeding from fiscal surpluses and natural resources such as oil, gas or copper. The commodity boom of the 2000s, the rise of emerging countries and especially the current account surpluses of fast growing Asian countries boosted the creation of SWFs. Among others, China, Russia and Dubai created their own SWFs. The amount of capital accumulated by most SWFs has recently dramatically increased due to the increasing prices of commodities such as oil. ^a

This phenomenon of SWFs emergence has continued to grow despite the economic downturn, the market volatility, the sovereign debt crisis and the decline of commodity and oil prices in recent years. 43 SWFs were created between 2005 and 2014 (25 since January 2008). The number of existing and potential funds exceeds one hundred, but there are currently 91 SWFs in activity, with assets amounting to 7.3 trillion dollars (SWF Institute). This development concerns not only developed countries but also all emerging countries, not just Asia and the Middle East but Latin America and Africa too. This is the case, for example, of Angola, Nigeria and Panama that established a SWF in 2012. Very recently, Israel has established a new SWF, "Israeli Citizens' Fund" whose purpose is to safeguard the windfall revenues made from natural gas. ^b Some other countries that

a. This is clearly the case of Gulf SWFs that own about 40 % of the total SWFs assets.

b. The activities of this fund are expected to start in 2017.

are planning to establish new SWFs are Bolivia, Japan, India and Thailand.

There is no consensus, in either the academic or practitioner literature, on what exactly is a SWF. Most definitions suggest that "*SWFs are government-owned investment funds set up for a variety a macroeconomic purposes*" (IMF (2008)). Confronted to this accumulation of foreign-currency reserves, policymakers can lay down a number of development objectives which they deem appropriate. Such pursued objectives are diversified, including the stabilisation of fiscal revenues, the financing of pensions, saving for future generations, the optimisation of the returns or the diversification of the economy (IMF (2008)). In order to meet their policy objectives, one issue that policymakers will face is to determine whether or not they should set up a SWF. Once they have decided to set up a fund, policymakers will have to define operational objectives as well as a strategic asset allocation consistent with their policy objectives. When the size of foreign-currency reserves is considerable, policymakers can follow several broad policy objectives at the same time and/or decide to establish not one but two or more SWFs depending on the objectives assigned to each.

Given the increasing number of SWF creations in recent years and their increasing importance in advanced and emerging countries, the questions of why a country decides to set up a SWF, and what type of SWF have become of major importance. In line with the huge literature trying to answer the question of the optimal level of exchange reserves, the decision of setting up a SWF is closely linked to the excess of exchange reserves (Griffith-Jones & Ocampo (2012)). It is also mostly linked to the origins of these ample reserves and to the longevity of these sources. This was clearly the case after commodity price booms during the seventies and in the last few years, after a new resource was discovered or when administration of an existing resource was being restructured. In that case, the level of foreign reserves brutally increases in a long-lasting way and the country may consider what is the adequate level of revenues. It can also determine

what part of these revenues can be considered in excess and can be set aside. Examples of countries that have set up a SWF after a new natural resource was found are Brazil (after large oil deposits were discovered), Israel (after two big gas fields were found) or Mongolia (after mining concessions were granted). This was also the case of other SWFs like the funds of Papua New Guinea and Ghana.^c

Another reason that can explain the decision of setting up a SWF is the commodity prices volatility. A boom of commodity prices, such as that in the 1970s and in the last years for oil, tends to swell the sovereign asset holdings of commodity-exporting countries whereas the drop of oil price has the reverse effect. Countries specialized in natural resources are therefore extremely dependent on the prices of these natural resources and on their volatility. To deal with these concerns, policymakers can decide to save a share of the gains from the boom of commodity prices in a sovereign wealth fund aimed at stabilizing the fiscal impact of fluctuating commodity prices and smoothing boom or bust cycles. The recent decrease in energy prices and more particularly oil prices does not reduce at all the strategic importance of commodity-based funds, because most of them were established to increase the economic resilience of petroleum exporting countries to the depletion of their reserves and the volatility of resources prices.

When a country is dependent on its natural resources, a boom of commodity prices or the discovery of a new natural resource can lead to inflationary pressures and an appreciation of the real exchange rate, which then damages the non-resource tradable sector. This phenomenon is known in the academic literature as "Dutch Disease". Commodities-exporting countries which suffer from Dutch Disease are for example Canada, Australia and Norway (Corden & Neary (1982), Beine et al. (2013)). One of the possible policies to prevent an occurrence of the Dutch Disease or to mitigate its effects associated with booms in natural resources sectors could be the creation of a SWF which may allow that the proceeds of the fiscal surplus go out of the domestic economy.

c. Papua New Guinea Sovereign Wealth Fund as well as the Ghana Petroleum Funds were established in 2011.

The fact that many funds have continued to be set up in recent years despite the economic downturn, the market volatility, the sovereign debt crisis and the decline in commodity and oil prices shows that criteria other than economic can also explain the decision. In particular, some countries like Angola and Nigeria, that have set up a fund recently, have low governance and/or are non-democratic countries. Natural resources rents have often been related to waste and corruption and consequently to poor long run economic performance (Sala-i-Martin & Subramanian (2003)). The decision of setting up a SWF for a country can therefore have a political dimension. Even if the declared objective of SWFs created by autocratic countries is to ensure that the proceeds from natural resources rents will be channeled through a transparent, accountable and professionally managed fund, these SWFs are a mean for these countries to embezzle natural resource revenues in order to invest abroad. An important concern with SWFs created by developing countries is the unethical nature of these funds coupled with the autocratic and authoritarian nature of the countries where these funds are establishing. Setting up a SWF for these countries can be seen as a mean to expand their wealth and their financial power through long-term investment strategies involving assets in Western countries as it is the case for Gulf SWFs.

Although the literature analyzing SWFs investment strategies and how SWFs impact target-firm economies has been important over the past decade^d, there are very few studies questioning the rationale for SWF creation, probably due to data constraints but also due to a "western bias" in most of the related research (Aizenman & Glick (2009), Carpentier & Vermeulen (2014), Das et al. (2009)).

The paper aims to fill the gap by assessing the determinants of the SWF's creation. More precisely, we would like to test whether there are some countries for which the creation of a SWF is more appropriate. Using a large-scale database, we analyze the economic, political and institutional factors of countries which decided to establish a SWF.

d. For an exhaustive literature on SWFs see the excellent survey of Megginson & Fotak (2014).

In particular, we test if the emergence of a SWF can be explained by the following factors : 1) the excess foreign exchange reserves due to natural resources rents or persistent current account surpluses ; 2) the volatility of commodity prices ; 3) a way to mitigate the "Dutch Disease" effects ; 4) the governance of the country.

We test these hypotheses on a sample of 37 countries that established a SWF over the period 2000-2014 and compare them to a large panel of countries that also have natural resources rents but that did not set up a SWF. In order to allow the temporal dimension as well as the unobserved heterogeneity of countries, a Logit panel model with random effects is estimated. The panel dimension in the model allows to take into account the temporal dimension which is essential for explaining the number of funds created by year as well as the unobserved heterogeneity between the different countries. In the same way, the inclusion of random effects allows to control for omitted variables.

The remainder of the paper is presented as follows : in Section 1.2, we present the theoretical framework and empirical hypotheses. Section 1.3 provides some details regarding the data, Section 1.4 presents the model and Section 1.5 presents our empirical findings. Finally, Section 1.6 concludes.

1.2. Theoretical framework and empirical hypotheses

How can we explain the decision of setting up a Sovereign Wealth Fund for a country? Should countries with large, and maybe temporary excess cash flows allocate a part of these flows to a SWF? Is this decision based on economic, financial and/or political factors? Although the literature on the determinants of SWFs' investments has been important over the past decade^e, very few studies question why a government decides to set up a SWF and uses it to invest abroad rather than using the revenues to invest in its

e. See the detailed survey of Megginson & Fotak (2014) on this issue.

own economy.

Among these few studies, Griffith-Jones & Ocampo (2012) develop a theoretical framework to analyze the rationale for the existence of SWFs. According to this study, the decision to create a fund depends on the origins of excess foreign exchange reserves, on the longevity of these sources and on the other assets and liabilities of the country.

Aizenman & Glick (2009) perform an empirical analysis in order to identify the determinants of the existence of SWFs in 2007 and 2008 and find that the main determinants are fuel export, foreign exchange reserves and current account surplus. In the same way, Carpentier & Vermeulen (2014) test if the emergence of a SWF is determined by the existence of natural resource profits, the government structure and the ability to invest in the domestic economy over the period 1998-2008. They conclude that SWFs tend to be established in countries with an autocratic regime and that have difficulties finding suitable opportunities for domestic investments.

The paper aims to fill the gap by assessing the determinants of the creation of a SWF. For that purpose, we analyze the economic, political and institutional characteristics of countries that decided to set up a SWF. In particular, we test if the emergence of these new recent funds can be explained by the following factors : 1) the accumulation of exchange reserves due to natural resources rents or persistent current account surpluses ; 2) the volatility of commodity prices ; 3) a solution to mitigate the "Dutch Disease" effects as well as "the natural resources curse" and 4) the governance of the country.

H1 - The accumulation of exchange reserves due to natural resources rents or persistent current account surpluses increases the probability of setting up a SWF.

There is no theoretical model for deciding the level of exchange reserves that is sufficient for a country and above which the government can consider the possibility of setting up a SWF. In perspectives of asset-liability and public asset management, the

government should optimize asset allocation choices by considering its balance sheet in its entirety. For that, it should identify all financial assets and liabilities by taking into account commodity values and future tax revenue. In a crisis prevention perspective, the most relevant indicators are the reserve adequacy metric and the debt sustainability assessment of the IMF (IMF (2011)). Another used metric is the ratio of international reserves to short-term external debt. A value of one for this ratio means that a country with a balanced current account will have sufficient reserves to cover its obligations for one year. The level of necessary reserves should be higher if there is a deficit of the external current account of the country, the exchange rate is overvalued or the banking system is weak. This level of reserves can be more limited in the case of a flexible exchange rate regime or if the government can quickly borrow large amounts from non-residents.^f

When the adequate threshold of exchange reserves or fiscal revenues is reached, it is not necessarily appropriate to set up a SWF. In a first step, the Central Bank can decide to manage exchange reserves in a long-run perspective. Likewise, a cyclical budgetary surplus can cover a structural potential deficit or reduce the public debt. It is only when the accumulation of the exchange reserves or fiscal revenues is considered in a permanent way and when the financial conditions are favorable that it may be appropriate to set up such a fund. This is particularly true when the accumulation of foreign reserves is accompanied by considerable social costs especially in developing countries as shown by Rodrick (2006) or Fukuda & Kon (2010).^g

In line with the huge literature trying to answer the question of the optimal level of exchange reserves, the decision of setting up a SWF is therefore closely linked to the excess of exchange reserves. It is also mostly linked to the origins of these reserves and

f. Jeanne & Ranciere (2007) and Jeanne (2007) have developed theoretical models to answer the question of the optimal level of reserves in a cost-benefit framework.

g. Rodrick (2006) finds that social costs of the accumulation in foreign reserves for a developing country amount to around 1 percentage point of GDP annually.

the longevity of these sources. This is clearly the case when a new natural resource is discovered or when the administration of an existing resource is restructured. In that case, the level of foreign reserves brutally increases in a long-lasting way and the country may consider what is the adequate level of revenues. It can also determine what part of these revenues can be considered in excess and can be set aside. This is also the case for non-commodity-exporting countries which have large and persistent current account surpluses (see Aizenman (2007)). When sovereign assets reach a sufficient level to ensure that the liquidity needs of the country are met, policymakers become more risk-tolerant and are ready to allocate excess reserves to one or several different accounts depending on the assigned objectives. The motivation for launching a SWF is therefore to allow "excess" foreign exchange reserves to be channeled away from low-yielding sovereign bonds to higher-return equity and corporate debts investments.

Related to this theory, we would like to test whether ample exchange reserves due to either the discovery of new natural resources rents or to large and persistent current account surpluses increase the probability of setting up a SWF. Even if 'excess' foreign exchange reserves seem to be an obvious determinant of the decision of setting up a fund, assessing this hypothesis will allow to verify whether countries with excess reserves systematically set up a SWF.

H2 - SWFs are set up to insulate the budget and economy from the volatility of natural resource prices and external shocks.

Another reason that can explain the decision of setting up a SWF is the commodity price volatility. A boom of commodity prices, such as that in the 1970s and in the last years for oil, tends to swell the sovereign asset holdings of commodity-exporting countries whereas the drop of oil price has the reverse effect. Countries specialized in natural resources are therefore extremely dependent on the price of these natural resources and

on their volatility. Commodity prices, and more particularly oil and natural gas prices, are volatile because of low short-run elasticities : in case of oil price increase for example, the demand does not fall much in the short run nor does supply rise. As a result, in case of external shock, the price has to rise in order to clear the market (Frankel (2012)). In particular, when oil-exporting countries know windfall gains associated with a sharp rise in the oil price, it induces for these countries an increase of government spending and this spending will fall sharply when oil prices will collapse. A great number of existing studies find that the volatility of natural resources prices is bad for the economic growth of the country (see Blattman et al. (2007), Hausmann & Rigobon (2003) or Van der Ploeg & Poelhekke (2005) among others).

To deal with these concerns, policymakers can decide to save a share of the gains from the boom of commodity prices in a sovereign wealth fund aimed at stabilizing the fiscal impact of fluctuating commodity prices and smoothing boom or bust cycles. This counter-cyclical role in relation to commodity world prices is particularly important when the economy of the country is dependent on commodity exportations.

H3 - SWFs are set up to mitigate the "Dutch Disease" effects as well as "the natural resources curse".

When an economy is dependent on its natural resources, a boom of commodity prices or the discovery of a new natural resource can lead to inflationary pressures and an appreciation of the real exchange rate, which is detrimental to economic growth. This phenomenon is known for the economists as "Dutch Disease" in reference to the experience of the Netherlands after the natural gas discoveries in the 1960s.^h As a matter of fact, a strong, but perhaps temporary, upward swing in the world price of the export commodity results in a sharp increase of budgetary revenues of the exporting country. It

h. See the reference paper of Corden & Neary (1982) on the modeling of the Dutch Disease issue.

induces inflationary pressures when these revenues are spent (especially when the government increases spending in response to the increase of tax receipts and royalties). Such a situation also significantly increases foreign currencies entries and in particular US dollars. The conversion in local currency means an increased demand for this latter and therefore a large real appreciation of the currency (taking the form of a currency appreciation if the country has a floating exchange rate or the form of money inflows and inflation if the country has a fixed exchange rate), which leads to a loss of price competitiveness of traded goods. These effects cause an increase in the price of non-traded goods (goods and services that are not internationally traded) relative to traded goods (manufactured and other internationally traded goods other than the export commodity). The production factors like capital and labor turn to the export commodity and non-traded goods sector at the expense of the tradable sector. Therefore the exploitation of natural resources can lead to a low diversified growth at the sectoral level, without other export than commodities. As explained by Frankel (2012) in his survey, we speak about a disease because these effects are sustainable and the process is not reversed or is painfully reversed when the world price of export commodity goes down.

One of the possible policies to deal with the Dutch Disease problem is the creation of a SWF. As explained by Corden (2012), a fiscal surplus generated by tax and expenditure would reduce demand for domestic goods and services and therefore would be deflationary. The domestic interest rate would decrease and then would lead to a depreciation of the exchange rate and a mitigation of the Dutch Disease effect. It is desirable that the proceeds of the fiscal surplus do not finance investment at home because this would cause again an increase of aggregate demand for domestic goods and services and hence that would amount to negating the initial deflationary effects of the fiscal surplus. The creation of a SWF allows that the proceeds go out of the domestic economy : "*the proceeds might go into a Sovereign Wealth Fund that invests its funds wholly abroad*" (Corden (2012), p.14). Saving the proceeds abroad in a fund can therefore assist in

mitigating Dutch Disease and related macroeconomic consequences. In the same spirit, Frankel (2012) suggests that the proceeds of fiscal surplus should be used to set up a transparent SWF which would assure that future generations benefit from the natural resource windfall. Furthermore, the latter could be invested by the fund in assets that earn higher return than the return on US treasury bills. This is clearly the aim of saving funds which are intended to fight against pernicious effects of natural resource over-exploitation, like the Dutch Disease.

We would like to test whether the probability of setting up a SWF increases for resource-rich countries knowing Dutch Disease. More precisely, as the first effect of the Dutch disease is a commodity-driven appreciation of the currency leading to a decline in the competitiveness of the domestic manufacturing sector, we try to test whether the probability of setting up a fund increases for resource-rich countries knowing an appreciation of the real exchange rate.

H4 - Countries with low democratic political institutions should be more likely to have SWFs.

In line with the literature on Dutch Disease, many studies refer to the "natural resource curse" for explaining the poor performance of resource-rich countries (see among others Sachs & Warner (1995), Sachs & Warner (2001), Kaldor et al. (2007), Sala-i-Martin & Subramanian (2003) or Smith (2004)). The natural resource curse hypothesis provides that it is not the economy dependence on natural resource revenues but the abundance of the latter that would be responsible for the low economic growth. In case of a boom of commodity prices, considerable revenues from the exploitation of natural resources lead to a specialization of the exports in commodities according to the Dutch Disease theory. But when the world prices fall, natural resources rents still penalize the long-run economic growth. This abundance encourages the authorities to think that they will have

higher proceeds once world prices will rise again. These expectations cause an increase in the public debt which can become excessive (Gelb (1988)). The abundance of budgetary revenues induces an increase of the state's current expenditures (wages and social transfers) and unprofitable or too ambitious public investments. Related to this, many studies find that concentration of natural resources is strongly associated with weak public institutions and therefore with slower growth (Isham et al. (2003), Sala-i-Martin & Subramanian (2003)). For example, Sala-i-Martin & Subramanian (2003) show from the Nigerian experience that waste and corruption from oil rather than Dutch Disease have been responsible for the poor long-run growth of the country. In the same way, natural scarcity and abundance of these resources for one minority of countries have been cited as a cause of civil war.

The decision of setting up a SWF for a country can therefore have a political dimension. We expect that countries with low democratic political institutions should be more likely to have SWFs. According to the natural resource curse theory, countries with weak institutions generally have natural resource wealth that leads to resource dependency and rentierism. Even if the declared objective of these SWFs is to ensure that the proceeds from natural resources rents will be channeled through a transparent, accountable and professionally managed fund, they are a mean for autocratic countries to embezzle natural resources revenues in order to invest abroad. This is clearly the case of reserve investment funds that aim to maximise the returns of funded assets subject to a low risk tolerance (Das et al. (2009)). The creation of a SWF for countries that are both politically and financially less open than developed countries can be viewed as a means to leverage their political influence abroad. These funds are generally managed in a non-transparent way, increasing the distrust of developed countries : *"When an increasing number of governments in non-democratic countries decided to create and expand SWFs, the critics particularly question the validity of the existing rules regulating the free market system"* (Chong & Bahgat (2016), p.8).

We would like to test the four hypotheses described above, which try to explain whether the decision to create a SWF is based on economic, institutional and political factors, although we recognize that variables serving to capture the factors may be working through multiple mechanisms.

1.3. Data and descriptive analysis

1.3.1. Creation of the SWFs sample

There is little consensus on a definition of what a SWF actually is, which explains the great variety of definitions given by authors. The lack of consensus on what really constitutes a SWF is due to the fact that these funds form a heterogeneous group of investors grouped into the SWFs category. There is however differences between funds with respect to their sources and size of assets, organizational structure, governance, risk factor and their objectives. An unanimously accepted definition is the one given by the International Monetary Fund : *"Sovereign wealth funds are government-owned investment funds set up for a variety a macroeconomic purposes."* (IMF (2008)). Therefore, the IMF defines SWFs as government-owned investment funds based on their objectives : i) stabilization funds designed to mitigate volatile commodity prices ; ii) saving/pension funds aimed to share wealth across future generations and financing pensions ; iii) reserve investment corporations intended to reduce the opportunity cost of holding excess foreign reserves and to search for investment policies with higher returns and iv) development/domestic economic support funds aimed to support domestic economy.

Considering this definition, we conducted a search of all existing SWFs by using different sources in order to have the most complete list. We start with a preliminary sample of SWFs given on the SWF Institute website by combining the names of funds published

by JP Morgan (Fernandez & Eschweiler (2008)), Catalano (2009), Lyons (2007), ESA-DEgeo studies on SWFs published every year (see for example Santiso (1995)) and the websites of the SWFs. When different names for the same SWF are found, we employ the fund's websites to eliminate duplicates.

This search yields a sample of 91 existing SWFs all over the world and 53 funds setting up over the period 2000-2014 from 37 countries. We capture about 58% of existing funds over the considered period in our dataset as the majority of SWFs have been created after 2000.ⁱ Appendix A.1 gives this list of SWFs and some information on these funds (country, estimated fund size, source of funding, year of establishment and declared objective(s) of the fund).

In order to avoid selection bias, we consider in our sample not only the 37 countries that established a SWF during the considered period but also 53 other countries randomly selected^j (developed and developing countries, with and without natural resources rents) that did not create a SWF during the period or that already created one before 2000. Some countries have been excluded from our database because of unavailability of data.^k As we have a binary decision, i.e setting-up a SWF or not - a logistic regression can be approached. As we look at the country level with a panel dimension, our dependent variable is equal to 1 during the year of the establishment of one or several SWFs for the country.^l This specification implies that if country i establishes a SWF in

i. As our sample begins in 2000, it does not include some funds like the Norwegian SWF (created in 1990, US\$873 billion in 2015, third largest fund), the Abu Dhabi Investment Authority (1976, US\$773 billion in 2015, fifth biggest fund) or the Kuwait Investment Authority (1953, US\$592 billion in 2015, sixth biggest fund). Source : SWF Institute. However, as our focus is on the emergence of new funds, the size of the funds does not matter in our analysis.

j. To avoid selection bias, we used the countries of the Worldbank database to build this control group, excluding only countries for which there were too many missing data.

k. Among these countries, eight established a SWF over the period 2000-2014. These countries are Equatorial Guinea, Mauritania, Palestine, Rwanda, Sao Tome and Principe, Taiwan, Timor-Leste and Turkmenistan.

l. Three countries (China, Russia and the United Arab Emirates) decided to set up two SWFs in the same year.

year t , then $y_{it} = 1$ just for year t and $y_{it} = 0$ for all other years.^m The panel dimension in the model allows to take into account the fact that a country can have set up several SWFs over the considered period. It is the case for 10 countries which have created more than one SWF over the period.

Table 1.1 reports the annual distribution of SWFs created over the period 2000-2014 all over the world by distinguishing them between commodity versus non-commodity funds. Even if the creation of this new state-owned investment vehicle is not a new phenomenon, there has been a significant increase of the number of SWFs established since 2000. Table 1.1 shows that 53 SWFs have been launched since 2000, with more than 30% of funds in the last five years. In contrast with other investors (pension funds, private equity,..) who withdrew from the market during the financial crisis, SWFs continued to grow in number, with 22% of funds created in 2007-2008. The financial crisis has however stopped the evolution in the two years 2009-2010 but the fat years in terms of SWFs number growth are 2011-2012 with 30% of new funds.

According to their source of funding, SWFs can be grouped as commodity-based SWFs and non-commodity SWFs. Commodity-based SWFs are funded mainly from oil exports, gas or other minerals, while non-commodity SWFs are funded by the transfer of assets from both government budget surpluses and excess foreign reserves. Considering the fund's source of proceeds (commodity or non-commodity funds), Table 1.1 shows that 60% of SWFs created over the period 2000-2014 are commodity-based funds (oil, gas and other commodities). A lesser but significant proportion (40%) of SWFs are funded by non-commodity sources, including the biggest fund of China (China Investment Corporation established in 2007), the South Korean SWF (Korea Investment Corporation established in 2005).

m. The aim of this paper is indeed to understand why a country decide to establish a SWF and not when a country is likely to establish a SWF.

1.3. Data and descriptive analysis

Table 1.1. – **Annual Distribution of SWFs establishment**

This table presents the number of SWFs established between 2000 and 2014. Column 4, (resp. 6) gives the number of commodity-based SWFs (resp. non-commodity-based SWFs). Column 3 gives the proportion of SWFs created in the year t among all the SWFs created over the period 2000-2014. Column 5 (resp. 7) gives the proportion of commodity-based SWFs (resp. non-commodity-based SWFs) created the year t among all the commodity-based SWFs (resp. non-commodity-based SWFs) created over the period 2000-2014.

	Number of SWFs	Proportion (All SWFs)	Number of Commodity SWFs	Prop. Com. SWFs	Number of Non-Commodity SWFs	Prop. Non-com. SWFs
2000	5	9.4%	4	12.5%	4	14.3%
2001	1	1.9%	0	0%	0	0%
2002	2	3.8%	2	6.3%	2	7.1%
2003	2	3.8%	1	3.1%	1	3.6%
2004	0	0%	0	0%	0	0%
2005	5	9.4%	3	9.1%	3	10.7%
2006	7	13.2%	3	9.4%	2	7.1%
2007	6	11.3%	4	12.5%	3	10.7%
2008	6	11.3%	3	9.4%	3	10.7%
2009	1	1.9%	0	0%	0	0%
2010	0	0%	0	0%	0	0%
2011	8	15.1%	6	18.8%	5	17.9%
2012	8	15.1%	4	12.5%	3	10.7%
2013	0	0%	0	0%	0	0%
2014	2	3.8%	2	6.3%	2	7.1%
Total	53	100%	32	100%	21	100%

Table 1.2 gives the geographic distribution of SWFs created over the period 2000-2014 by distinguishing commodity and non-commodity funds. SWFs are, for the most part, from emerging countries as only 25% of them are from OECD countries (with about 11 % in Europe and in North America). The majority are from Middle East (21%), Africa (17%) and Asia (13%). Considering the fund's source of proceeds (commodity or non-commodity-based funds), commodity-based funds are mainly located in Middle East (28%), Africa (22%) and OECD countries (22%), whereas non-commodity-based funds are mostly in Asia (29%) and OECD countries (29%). Non-commodity-based funds are much larger than commodity-based funds as their assets under management are in mean USD 74.29 billion whereas commodity-based funds manage in mean USD 33.65 billion.

Table 1.3 reports the distribution of SWFs created over the period 2000-2014 by dis-

Table 1.2. – **Geographic Distribution of SWFs Foreign Investments**

This table presents the number of commodity and non commodity SWFs created by region over the period 2000-2014. The second line of each region gives the proportion of commodity (resp. non-commodity) SWFs in region K among all commodity (resp. non-commodity) SWFs around the world.

Region	Commodity funds	Non-Commodity Funds	Total Number of SWFs
Africa	7 22%	2 10%	9 17%
East and Southeast Asia	1 3%	6 29%	7 13%
Middle East	9 28%	2 10%	11 21%
Oceanic Bassin	1 3%	0 0%	1 2%
OECD Countries	7 22%	6 29%	13 25%
Russia and Central Asia	4 13%	2 10%	6 11%
South America	3 9%	3 14%	6 11%
All Regions	32 100%	21 100%	53 100%
Mean AUM (bln \$)	33.65	74.29	49.75

tinguishing them according to their objectives defined above. The objectives of the funds have been deduced from the websites of SWFs. In practice, SWFs may have several different objectives depending on the source of funding. Most of SWFs (36%) are established with the primary aim to support the domestic economy. 34% of SWFs created since 2000 have a macro-stabilization objective. This is particularly the case for countries that are highly dependent on commodity exports and therefore exposed to swings in global prices (47% of macro-stabilisation funds are commodity-based funds). 25% of SWFs are established in order to save for future generations of finance pensions. Reserve investment funds are less represented (21%) but they are those which manage the largest assets (USD 119.58 billion). This results are in line with those of Kimmit (2007) who notes that commodity-based funds are prone to multiple and changing objectives mostly based on fiscal revenue stabilization whereas non-commodity-based funds are more commonly used to make investments when a country has accumulated excess fo-

reign exchange reserves.

Table 1.3. – **SWFs by objectives**

This table presents the number of SWFs with objective j created over the period 2000-2014. The second line of each region gives the proportion of SWFs with objective j among all SWFs. Column (3) and (4) give respectively the number of Commodity-based SWFs and Non-Commodity-based SWFs with objective j .

Objective	Total number funds	Commodity funds	Non-commodity funds	Mean AUM (bln \$)
All objectives	53 100%	32 100%	21 100%	49.75
Macrostabilisation	18 34%	15 47%	3 14%	25.64
Saving/Pension	13 25%	8 25%	5 24%	32.64
Reserve Investment	11 21%	7 22%	4 29%	119.58
Domestic Economic Support	19 36%	8 25%	11 52%	24.57

1.3.2. Other data

We employ a number of variables that should potentially explain the decision of setting up a SWF for one country. These variables relate to macroeconomic and institutional country factors and aim to test the theoretical hypotheses explained above.

Among the selected macroeconomic variables, the wealth effect of a country is captured by the annual variation of the GDP (denoted $\Delta \log GDP$). For the econometric analysis, the GDP series are expressed in logarithmic form to preempt the usual problem of heteroskedasticity when using the original index numbers.

The main potential determinants of the fund's creation are related to revenue inflows, i.e. excess foreign exchange reserves due to natural resource rents for resource-rich countries and current account surplus for non-commodity countries. We consider as proxy of excess foreign exchange reserves - reserves in excess of traditional balance of payments needs - a dummy variable equal to 1 if the ratio of international reserves

to the public debt is above 100% and 0 otherwise (*EXCESS RESERVES*).ⁿ As evoked in Hypothesis 1, the underlying idea is that the creation of a SWF for a country may only be considered when external debt has been considerably reduced and/or when there is a source of increasing reserves (for example windfalls due to the discovery of a new natural resource). The natural resources rents (*RENT*) are measured by the sum of total natural resources rents (oil, gas, mineral) in percentage of GDP. We expect both variables to be positive as the more a country accumulates wealth and natural resource rents, the more likely the country is to create a SWF. Another important determinant of the fund's creation for non-commodity countries (like for example for Asian countries) is the current account surplus. Unfortunately, this variable is unavailable for many countries in our panel dataset but can be proxied by excess foreign exchange reserves.

As the main objective of macroeconomic stabilization funds is to smooth short and medium-term commodity price fluctuations and as more than 50% of countries which created a SWF between 2000 and 2014 are oil-exporting countries, we consider that the variation of oil prices (*OILPRICE*) is an important determinant of the fund's creation as explained in Hypothesis 2.

In order to test whether SWFs may be created in order to mitigate the "Dutch Disease" effect (Hypothesis 3), we employ the variation of the real effective exchange rate ($\Delta REER$). As the first "Dutch disease" effect for a resource-rich country is a commodity-driven appreciation of the currency in the short run (Corden & Neary (1982)), we test whether the probability of setting up a fund increases for resource-rich countries knowing an appreciation of the real exchange rate in the short run.^o We select effective

n. Excess foreign exchange reserves are generally proxied in the literature by two traditional rule-of-thumb measures : i) the difference between actual foreign exchange reserves and the value of three months of imports; ii) the ratio or the difference between actual foreign exchange reserves and total public debt known as the Greenspan-Guidotti rule (see for example Beck and Fidora (2008) Beck & Fidora (2008)). More recently, the IMF developed a new metric to assess reserve adequacy (IMF (2011)) which is calculated only for emerging markets. Unfortunately, the high number of missing data didn't allow us to use these metrics. Despite the assumptions our proxy for excess reserves implies, this variable is informative to assess if a country has excess reserves or not.

o. The literature on "Dutch Disease" (see among others Van der Ploeg (2005) and Frankel (2012)) shows that the heavy reliance on natural resources tends to hinder the accumulation of human and physical capital in the country. This is detrimental for the evolution of the productive capacity of the

rather than bilateral real exchange rates as the former give a trade-weighted measure of the international competitiveness of a country against all its trade partners. This selection avoids potential biases associated with the arbitrary choice of a base country for a bilateral real exchange rate analysis.

Theoretical considerations developed in Hypothesis 4 suggest that SWFs are more likely to get created in countries with low governance in terms of government effectiveness, regulatory quality and corruption control. Institutional variables measuring the level of political risk of the country are a corruption dummy variable (*CORRUPTION*) that equals 1 if the country is corrupted and 0 otherwise. The level of authority of the regime (democracy versus autocracy) is a dummy variable based on the Polity IV index (*POLITY*) that equals 1 if the country is autocratic and 0 otherwise. We expect these variables to be positively related to the decision of setting up a SWF. As underlined in Hypothesis 4, concentration of natural resources is strongly associated with weak public institutions. Therefore, we include in our analysis two interaction variables : one between *RENT* and *POLITY* ($RENT \times POLITY$) and the other between *RENT* and *CORRUPTION* ($RENT \times CORRUPTION$). We expect both variables to be positively related to the decision of setting up a SWF. Appendix 2 reports the source and the definition of each variable employed in our study.

Table 1.4 provides bilateral t-tests of the mean differences that exist between countries with a SWF and those without in our dataset. Overall, these results suggest that countries that established at least one SWF over the period 2000-2014 have some characteristics that countries that did not establish a SWF do not. More precisely, countries that have established a SWF reported on average higher GDP, higher natural resources rents and higher foreign exchange reserves than countries without SWF, with statistically negative mean difference. These results confirm that on average countries with higher

country and its competitiveness, which is reflected by a long-run depreciation of the real effective exchange rate.

revenues are more likely to establish a SWF (Hypothesis 1). Concerning institutional variables, our sample dataset shows that countries with a SWF exhibited on average a higher level of corruption (77% of corrupted countries against 2% for countries without a SWF), with statistically positive mean difference. This suggests that countries with a high corruption level are more likely to establish a SWF than democratic ones, which seems to be consistent with our Hypothesis 4. As described in Table 1.5, the correlation between some variables is quite high, stressing that some variables can not be estimated in the same model.

Table 1.4. – **Bilateral tests of mean differences across SWF countries and No-SWF countries**

This table presents the p-value of two-group mean-comparison tests performed across countries that have created at least one SWF over the period (SWF countries) and countries that did not create a SWF (No-SWF countries). $H_0 : Mean_{Non-SWFCountries} - Mean_{SWFCountries} = 0$. There are three alternative hypothesis : t-test 1 - the difference is significantly different from 0 ; t-test 2 - the difference is significantly inferior to 0 ; t-test 3 - the difference is significantly superior to 0.

Variable	SWF countries	No-SWF countries	p-value t-test 1	p-value t-test 2	p-value t-test3
GDP	8.07e+11	3.33e+11	0.000 ***	0.000 ***	1.000
RENT	21.418	10.504	0.000 ***	0.000 ***	1.000
RESERVES	0.212	0.180	0.013 **	0.006 ***	0.994
REER	104.092	102.391	0.181	0.091 *	0.910
CORRUPTION	0.768	0.018	0.000 ***	0.000 ***	1.000
POLITY	0.324	0.302	0.378	0.189	0.812

Table 1.5. – **Correlation matrix**

Variable	$\Delta OILPRICE$	$\Delta REER$	$\Delta \log GDP$	RENT	CORRUPTION $\times RENT$	POLITY $\times RENT$
$\Delta OILPRICE$	1.000					
$\Delta REER$	0.026	1.000				
$\Delta \log GDP$	0.465	0.348	1.000			
RENT	-0.030	0.051	0.156	1.000		
CORR. $\times RENT$	-0.027	0.047	0.154	0.947	1.000	
POLITY $\times RENT$	-0.020	0.010	0.121	0.771	0.729	1.000

1.4. Methodology

1.4.1. The random effects panel Logit model

Unlike Aizenman & Glick (2009) and Carpentier & Vermeulen (2014) who estimate the determinants of SWFs creation using a Logit model with cross-section data, we estimate a panel Logit model with random effects.^p The panel dimension in the model allows to take into account two central aspects : i) the temporal dimension that is necessary for explaining the number of created funds by year in our sample ; ii) the unobserved heterogeneity between the different countries. The inclusion of random effects in the panel model allows to control for omitted variables.^q

Let us consider y_{it} an observed dependent variable representing the decision to create a SWF in country i ($i = 1, \dots, n$) in the year t ($t = 1, \dots, T$).

The model is then :

$$y_{it}^* = x_{it}\beta + c_i + u_{it}, \quad (1.1)$$

$$Pr(y_{it} = 1|x_{it}, c_i) = \Lambda(x_{it}\beta + c_i) \quad (1.2)$$

where $y_{it} = 1$ if $y_{it}^* > 0$ and 0 otherwise, x_{it} is a $1 \times K$ vector of observed explanatory variables, β is a $K \times 1$ vector of parameters, c_i is an unobserved time invariant individual effect, u_{it} is an idiosyncratic error term and Λ the logistic cumulative density function.^r

p. Including random effects in the model allow us to analyze . As the aim of the paper is not to figure out why a country decide to establish a fund a specific year, but which countries are likely to set up a SWF, the random effect specification appears to be more suitable than the fixed effect specification.

q. In order to discriminate between fixed or random effects, we run the Hausman test. The results (available on request) show that the random effects model is preferred because it is a more efficient estimator.

r. The choice of a random effects panel model requires strong assumptions about the unobserved heterogeneity : it means that c_i is unrelated to x_{it} , so that the conditional distribution $f(c_i|x_{it})$ is not dependent on x_{it} ($i = 1, \dots, 90$).

1.4.2. Panel unit root tests

As we run a panel Logit model, we checked the stationarity of macroeconomic variables performing the Im et al. (2008) (IPS, henceforth) and the Pesaran (2007) (CIPS*, henceforth) panel unit root tests. The IPS test is based on the mean of the individual countries ADF statistics. The CIPS test is the cross-sectionally augmented panel unit root test (CIPS) truncated to avoid excessive influences of extreme outcomes. The IPS test does not allow for cross-country dependence, whereas the CIPS test does. For both tests, the null hypothesis is that the series has a unit root for all countries in the panel against the alternative that for at least one country the series is stationary. The results of these tests are presented in Table 1.6. We observe that the two tests considered reject the null hypothesis at the 1% level of significance for all variables - with *logGDP* and *REER* and *OILPRICE* taken in difference, which means that all the variables of the model are well stationary.

Table 1.6. – Panel unit root tests

Variable	IPS p-value	CIPS statistics
$\Delta \log GDP$	0.000 ***	-2.672 ***
RENT	0.000 ***	-2.610 ***
$\Delta REER$	0.000 ***	-3.358 ***
$\Delta OILPRICE$	0.000 ***	-2.600 ***

CIPS critical values : significant at 10% : -2.15 ; significant at 5% : -2.25 ; significant at 1% : -2.42

* significant at 10% ; ** significant at 5% ; *** significant at 1%.

1.5. Results

1.5.1. General model

Results of the panel random effects Logit model for all countries are given in Table 1.7. The left-hand side variable in equation (1) is a dummy variable equal to one if the country i ($i = 1, \dots, 90$) decided to establish one or several SWFs in year t ($t = 2000, \dots, 2014$) and zero otherwise.^s The right-hand side variables are the potential determinants of the SWF's emergence over the period. In the first column we include all the possible explanatory variables, corresponding to the complete model. Because of the correlation between some variables, we then report different restricted versions of this model (columns (2) to (7)).^t Robust standard errors are calculated for all regressions.

First, we find that the probability of establishing a SWF is positively related to excess foreign exchange reserves corresponding to Hypothesis 1. As our proxy of excess foreign exchange reserves is a dummy variable equal to 1 if the ratio of international reserves to the public debt of the country is above 100% and 0 otherwise, this result suggests that a country will decide to establish a fund if its reserves are above the level required to meet its public debt. Related to this result, we find unsurprisingly that the ownership of natural resources rents is an important determinant of the SWFs creation (model (3)). At last, we also find that the probability to create a fund is positively related to the country's increase in wealth ($\Delta \log GDP$ is positive and significant at a level of 10% in model (2)). These results are also in line with the conclusions of Aizenman & Glick (2009) and Carpentier & Vermeulen (2014).

Secondly, the volatility of natural resources prices and more precisely the variations of oil prices affect positively the probability of setting up a SWF. This confirms our Hypothe-

s. This means that the dummy variable is equal to zero if the country did not create a fund over the period 2000-2014 or already created one before 2000. This implicitly assumes that the decision to establish a SWF over the considered period is independent from the fact that the country has already a SWF.

t. Statistical inference is done with the Wald test in order to compare these restricted models to the complete model. For each model, statistical inference is done from the complete model using the Wald test based on a robust estimation of the variance-covariance matrix in order to test the joint significance of the explanatory variables. Results of the Wald tests are available upon request.

sis 2 according to which a country can decide to save a share of the gains from the boom of commodity prices in a sovereign wealth fund aimed at stabilizing the fiscal impact of fluctuating commodity prices and smoothing boom or bust cycles. This counter-cyclical role in relation to commodity world prices is particularly important when the economy of the country is dependent on commodity exportations. We will test hereafter if this result is particularly true for commodity funds and for macrostabilization funds, which aim at fighting against the volatility of natural resource prices.

Thirdly, Table 1.7 shows that the real effective exchange rate ($\Delta REER$) is significantly positive. As previously evoked, the oil production can generate significant wind-falls in terms of export earnings, which can cause inflationary pressures and an appreciation of the local currency, a phenomenon known as the Dutch Disease. A SWF that invests the proceeds from natural resources and fiscal surplus wholly abroad can mitigate the Dutch Disease phenomenon and related macroeconomic consequences thanks to the diversification effect. Our result suggests that the probability of setting up a fund increases for countries knowing an appreciation of the real exchange rate in the short run, which is consistent with our Hypothesis 3. The distinction between commodity and non-commodity funds done hereafter will allow to test whether this result is particularly true for resource-rich countries.

Table 1.7. – **Logit Panel Model with Random Effects : All SWFs**

This table reports results for the panel Logit model with random effects and robust errors considering all countries. The endogenous variable (*SWF DUMMY*) is a country dummy variable equals to 1 if the country established at least one fund in year t and 0 otherwise. In the first column we include all the possible explanatory variables, corresponding to the complete model. Because of the correlation between some variables, we then report different restricted versions of this model (columns (2) to (7)). Statistical inference is done with the Wald test in order to compare these restricted models to the complete model. For each model, statistical inference is done from the complete model using the Wald test based on a robust estimation of the variance-covariance matrix in order to test the joint significance of the explanatory variables. Robust standard errors are calculated for all regressions.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Constant	-4.557 *** [0.493]	-4.071 *** [0.290]	-4.145 *** [0.305]	-4.475 *** [0.486]	-4.052 *** [0.303]	-4.136 *** [0.313]	-4.032 *** [0.286]
EXCESS RESERVES	0.823 ** [0.361]	0.931 *** [0.358]	0.808 ** [0.378]	0.960 *** [0.349]	0.941 *** [0.349]	0.823 ** [0.368]	0.893 ** [0.361]
$\Delta OILPRICE$	0.026 ** [0.012]	0.023 * [0.012]	0.031 *** [0.011]	0.031 *** [0.011]	0.031 *** [0.011]	0.032 *** [0.011]	0.031 *** [0.011]
$\Delta REER$	0.022 ** [0.010]	0.021 ** [0.010]	0.025 *** [0.009]	0.025 *** [0.010]	0.027 *** [0.010]	0.025 *** [0.009]	0.027 *** [0.010]
$\Delta logGDP$	2.849 [2.723]	4.775 * [2.563]					
RENT	0.011 [0.011]		0.020 ** [0.009]				
CORRUPTION	0.555 [0.479]			0.751 * [0.452]			
POLITTY	0.102 [0.354]				0.362 [0.326]		
$CORRUPTION \times RENT$						0.020** [0.009]	
$POLITY \times RENT$							0.015 [0.009]
Log-likelihood	-195.959	-198.332	-197.560	-197.215	-198.720	-197.315	-198.255

* Significant at 10%; ** significant at 5%; *** significant at 1%. Robust standard-errors are between brackets.

Regarding Hypothesis 4 which stresses that countries with low democratic political institutions should be more likely to create SWFs, we find that the decision of setting up a SWF for a country has a political dimension. More precisely, the variable *CORRUPTION* is positively significant, which means that the probability of setting up a SWF increases for corrupted countries, and more precisely for corrupted resource-rich countries. This result is consistent with hypothesis 4 and with the results found by Aizenman & Glick (2009) and Carpentier & Vermeulen (2014) according to which country's governance is related to the establishment of a SWF.

1.5.2. Differentiation of SWFs by type of fund

In order to take into account differences among SWFs, we have refined the dependent variable in two ways. First this variable was split into two components : i) a dummy variable equal to one if the country i ($i = 1, \dots, 90$) decided to establish a commodity-based SWF in year t ($t = 2000, \dots, 2014$) and zero otherwise ; ii) a dummy variable equal to one if the country i ($i = 1, \dots, 90$) decided to establish a non-commodity-based SWF in year t ($t = 2000, \dots, 2014$) and zero otherwise. This distinction allows to test whether the potential determinants of the SWF's creation are the same for commodity and non-commodity-based funds. Secondly, we split the dependent variable into four dummy variables depending on the SWFs objectives, namely a dummy variable for macroeconomic stabilization ; one for saving funds ; one for reserve investment funds and at last a dummy for development funds. Table 1.8 provides the results of the panel random effects Logit model respectively for commodity-based funds and non-commodity-based funds and Table 1.9 displays the results for SWFs categorized according to their objectives.

Unsurprisingly, we find that natural resources rents are a key determinant of the creation of commodity-based funds, while excess foreign exchange reserves play a clear role

on the emergence of non-commodity-based funds. Interestingly, consistent with our previous result for all SWFs, Table 1.8 shows a positive significant relation between the creation of commodity-based funds and the volatility of oil prices, which is not the case for non-commodity-based funds. This is particularly the case for macrostabilization funds as shown in Table 1.9, whose primary aim is to attempt insulating the economy from excess volatility in commodity prices. In the early 2000s, increasing oil prices brought about a massive redistribution of income to oil exporting countries, resulting in current account surpluses and foreign exchange reserves in excess. These oil-exporting countries decided to establish new SWFs in order to manage the accumulation of foreign exchange reserves and to safeguard the economy from boom-bust cycles. Examples include the Revenue Regulation Fund of Algeria, the Oil Revenue Stabilization Fund of Mexico, the National Investment Corporation of Kazakhstan or Heritage and Stabilization Fund of Trinidad and Tobago created in 2000 with, for all these funds, an objective of macroeconomic stabilization. Other examples of SWFs creations with the same objective during the oil price spike in 2007-2008 are among others the National Welfare Fund of Russia and the reserve Fund for Oil of Angola.

We also find some evidence that the real effective exchange rate is a determinant of the creation a commodity SWF, as well as the existence of natural rents. These results suggest that resource-rich countries knowing Dutch Disease (appreciation of the REER and related macroeconomic consequences due to the diversification effect) are more likely to establish a commodity-based fund. The aim of such a fund is to invest the proceeds from natural resources and fiscal surplus wholly abroad in order to reduce the appreciation of the REER and therefore to mitigate the Dutch Disease effects.^u

u. Although beyond the scope of the paper, the obtained results would have been strengthened by a more complete analysis of the Dutch Disease mechanism. In particular, we do not provide a specific test regarding the Dutch Disease hypothesis because both economic and institutional variables are used in our model as explanatory variables for explaining the decision of creating a SWF. The short and long run effects of natural resources rents on the REER may be appropriate and the effect on the manufacturing sector productivity could be taken into account. See Beine et al. (2016) Beine et al. (2016) for an empirical analysis on the short and long-run impact of natural resources rents on the REER.

The distinction of funds according to their objectives brings out some interesting results. First, we see that characteristics driving SWFs creation are much different depending on the objective(s) assigned to the fund. The enrichment of a country is positively related to SWFs creation excepted for development funds. On the contrary, the corruption dummy is significant only for development funds. Surprisingly, we find that *EXCESS RESERVES* is positively related to the creation of reserve investment and development funds but not of macrostabilization and saving funds. This results disprove the consensus according to which the existence of excess reserves is a prerequisite to SWFs creation. Our results show indeed that macrostabilization funds are established by resources rich countries in order to prevent oil prices variations and the effects of the Dutch Disease. For example, Algeria established its SWF in 2000 with a low ratio of reserves on debt as well as Mongolia or Trinidad and Tobago.

Furthermore, these results brings to the forefront the political dimension in the decision to create a SWF. In particular, we find in Table 1.9 that *POLITY* is highly significant for reserve investment funds. This suggests that this type of funds is more likely to be created in autocratic countries. Some examples of reserve investments funds created in countries with low governance are Abu Dhabi Investment Council, Qatar Investment Authority, Nigeria Sovereign Investment Authority, Fundo Soberano de Angola or Oman Investment Fund. In the same way, our results provide evidence (at a level of 10% however) that development funds that aim at supporting the domestic economy are more likely to be created in countries with a high level of corruption.

Table 1.8. – **Logit Panel Model with Random Effects : Commodity-based SWFs and Non-Commodity-based SWFs**

This table reports results for the panel Logit model with random effects and robust errors by considering Commodity-based SWFs and Non-commodity-based SWFs. In models (1) and (2), the endogenous variable is a country dummy variable equal to 1 if the country established at least one SWF funded mainly from oil exports, gas or other minerals in year t and 0 otherwise. The endogenous variable in models (3) and (4) is a country dummy variable equal to 1 if the country established at least one SWF funded by the transfer of assets from both government budget surpluses and foreign reserve excess in year t and 0 otherwise. Columns (1) and (3) report the results of the complete models while columns (2) and (4) report the results of the parsimonious models. Statistical inference is done with the Wald test in order to compare the restricted models to the complete model.

	COMMODITY SWFs		NON-COMMODITY SWFs	
	(1)	(2)	(3)	(4)
Constant	-5.289 *** [1.535]	-4.907 *** [0.437]	-5.400 *** [0.748]	-5.181 *** [0.705]
EXCESS RESERVES	0.0551 [0.462]		1.178 ** [0.503]	1.286 *** [0.498]
$\Delta OILPRICE$	0.035 ** [0.015]	0.038 ** [0.013]	0.026 [0.020]	
RENT	0.039 *** [0.014]	0.038 *** [0.010]	-0.054 *** [0.019]	-0.051 *** [0.017]
$\Delta REER$	0.018 * [0.010]	0.017 * [0.009]	0.025 ** [0.012]	0.025 ** [0.012]
$\Delta \log GDP$	2.452 [3.144]		2.940 [3.998]	
CORRUPTION	0.056 [0.619]		1.314 ** [0.659]	1.370 ** [0.651]
POLITY	0.077 [0.508]		0.138 [0.546]	
Log-likelihood	-126.039	-133.806	-96.408	-97.347

* Significant at 10%; ** significant at 5%; *** significant at 1%. Robust standard-errors are between brackets.

Table 1.9. – **Logit Panel Model with Random Effects - Objectives of the funds**

This table reports results for the panel Logit model with random effects and robust errors by considering SWFs according to their objectives. In models (1) and (2), the endogenous variable (*MACROSTAB SWFs*) is a country dummy variable equal to one if the country established at least one macrostabilisation SWF in year t and 0 otherwise. In models (3) and (4), the endogenous variable (*SAVING SWFs*) is a country dummy variable equals to one if the country established at least one saving SWFs in year t and 0 otherwise. In models (5) and (6), the endogenous variable (*RESERVE SWFs*) is a country dummy variable equal to one if the country established at least one reserve investment SWF in year t and 0 otherwise. In models (5) and (6), the endogenous variable (*DEVELOPMENT SWFs*) is a country dummy variable equal to one if the country established at least one SWF with the aim to support domestic economy in year t and 0 otherwise. Columns (1), (3), (5) and (7) report the results of the complete models while columns (2), (4), (6) and (8) report the results of the parsimonious models. Statistical inference is done with the Wald test in order to compare the restricted model to the complete model.

	MACROSTAB. SWFs		SAVING SWFs		RESERVE SWFs		DEVELOPMENT SWFs	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constant	-6.016 *** [0.845]	-5.931 *** [0.593]	-5.024 *** [0.623]		-6.506 *** [0.943]	-7.042 *** [0.959]	-5.834 *** [0.886]	-5.717 *** [0.803]
EXCESS RESERVES	0.419 [0.510]		0.576 [0.533]		1.377 ** [0.669]	1.248 * [0.653]	0.983 ** [0.496]	1.147 ** [0.475]
$\Delta OILPRICE$	0.039 * [0.021]	0.042 ** [0.020]	0.039 * [0.024]		0.018 [0.022]		0.030 [0.022]	
RENT	0.041 ** [0.019]	0.031 ** [0.014]	0.027 [0.022]		-0.012 [0.018]		0.020 [0.016]	
$\Delta REER$	0.019 [0.013]	0.023 * [0.013]	0.016 [0.016]		0.030 ** [0.014]	0.027 * [0.015]	0.024 ** [0.012]	0.022 ** [0.010]
$\Delta \log GDP$	4.941 * [2.941]	4.455 ** [2.130]	3.799 [4.374]	8.111 *** [2.570]	4.961 [5.389]	8.742 ** [3.401]	-2.700 [3.673]	
CORRUPTION	0.398 [0.886]		-0.632 [0.631]		(omitted)* (omitted)*		1.364 * [0.764]	1.425 * [0.745]
POLITY	-0.907 [0.845]		-0.605 [0.654]		2.004 *** [0.742]	2.021 *** [0.767]	-0.563 [0.572]	
Log-likelihood	-81.861	-84.109	-76.910	-81.001	-47.541	-50.309	-95.891	-97.956

* Significant at 10%; ** significant at 5%; *** significant at 1%. Robust standard-errors are between brackets.

*This variable is omitted because, as it is a dummy variable equal to 1 for all Reserve Funds, there is no variability in this variable.

1.5.3. Marginal effects of explanatory variables

In order to interpret the size of the effects, we estimate conditional marginal effects for each of the parsimonious models. Conditional marginal effects (or marginal effects at the means) are marginal effects when all other variables are at their mean.^v Marginal effects of the model considering all SWFs are presented in table 1.10. For binary explanatory variables (*EXCESS RESERVES* and *CORRUPTION*), marginal effects show how $P(\text{SWF} = 1)$ ^w changes when the categorical variables vary from 0 to 1, holding all other variables at their means. For continuous explanatory variables, marginal effects measure the instantaneous rate of change of $P(\text{SWF} = 1)$, holding all other variables at their means.

Our results show that the marginal effects are significant for all the variables, suggesting that these variables are well related to the establishment of a fund. We find a high marginal effect of the increase in wealth indicates that an infinitesimal variation of the $\Delta \log GDP$ increases the probability to create a fund from 4.775, holding all other variables at their means. In the same way, we find that the probability of the SWF creation increases by 0.9 and 0.751 respectively for countries having excess foreign exchange reserves and knowing corruption. The effects of the other variables are smaller indicating that SWFs are created in countries with excess reserves, knowing an increase in wealth and with weak institutions (i.e. high level of corruption).

Table 1.11 reports marginal effects for the parsimonious models of panel Logit analyses considering different samples (commodity fund, non-commodity funds, macrostabilization funds, saving/pension funds, reserve investments funds and development funds). The marginal effect of the $\Delta \log GDP$ appears to be high for saving funds, reserve investment funds and to a lesser extent, macrostabilization funds, meaning that

v. Average Marginal Effects have also been calculated. The results are close to the Marginal Effects at the Means and are available upon request.

w. expressed in percentages.

Table 1.10. – **Conditional Marginal Effects - All SWFs**

This table reports Conditional Marginal effects for the panel Logit models with random effects and robust errors considering all countries presented in Table 1.7. Conditional Marginal Effects, also called Marginal Effects at the Means, are the Marginal Effects when all other variables equal their means. With binary independent variables (*EXCESS RESERVES* and *CORRUPTION*), the marginal effects show how $P(SWF = 1)$ changes when the categorical variable varies from 0 to 1, holding all other variables at their means. For continuous variables, the marginal effect measures the instantaneous rate of change of $P(SWF = 1)$. In this case, dy/dx gives the change in probability for a country to create a SWF for an infinitesimal increase of the variable, holding all other variables at their means.

	(1)	(2)	(3)	(4)
Constant	-4.071 *** [0.290]	-4.145 *** [0.305]	-4.475 *** [0.486]	-4.136 *** [0.313]
EXCESS RESERVES	0.931 *** [0.358]	0.808 ** [0.378]	0.960 *** [0.349]	0.823 ** [0.368]
$\Delta OILPRICE$	0.023 * [0.012]	0.031 *** [0.011]	0.031 *** [0.011]	0.032 *** [0.011]
$\Delta REER$	0.021 ** [0.010]	0.025 *** [0.009]	0.025 *** [0.010]	0.025 *** [0.009]
$\Delta \log GDP$	4.775 * [2.563]			
RENT		0.020 ** [0.009]		
CORRUPTION			0.751 * [0.452]	
CORRUPTIOND×RENT				0.020 ** [0.009]

* Significant at 10%; ** significant at 5%; *** significant at 1%.

Robust standard-errors are between brackets.

the richer a country is, the more it is likely to establish a fund with at least one of these objectives. In the same way, having excess reserves is a key determinant of SWFs creation in the case of non-commodity funds, reserve investment funds and development funds (respectively 1.286, 1.248 and 1.147).

Finally, our results confirm the political dimension of SWFs creation when considering non-commodity funds, reserve investment funds and development funds. More precisely, the probability to create a development fund increases by 1.425 when the country is corrupted and the probability to create a reserve investment fund increases by 2.021 when the country is autocratic. These results may be interpreted in two ways. On the

one hand, a SWF may be a mean for countries with low democratic institutions to ensure that special types of revenue are aligned to their intended purpose. On the other hand, a SWF may be a mean for autocratic and/or corrupted countries to hide financial abuse (Chatham House (2014)).

Table 1.11. – **Conditional Marginal Effects - Type of funds**

This table reports Conditional Marginal effects for the panel Logit models with random effects and robust errors considering COMMODITY, NON COMMODITY, MACROSTABILISATION, SAVING, RESERVE, DEVELOPMENT presented in Table 1.8 and 1.9. Conditional Marginal Effects, also called Marginal Effects at the Means, are the Marginal Effects when all other variables equal their means.

	COMMODITY	NON-COMMODITY	MACROSTAB	SAVING	RESERVE	DEVELOPMENT
$\Delta OILPRICE$	0.038 *** [0.013]		0.042 ** [0.020]			
RENT	0.038 *** [0.010]	-0.051 *** [0.017]	0.031 ** [0.014]			
$\Delta REER$	0.017 * [0.009]	0.025 ** [0.012]	0.023 * [0.013]		0.027 * [0.015]	0.022 ** [0.010]
EXCESS RESERVES		1.286 *** [0.498]			1.248 * [0.653]	1.147 ** [0.475]
CORRUPTION		1.370 ** [0.651]				1.425 * [0.745]
$\Delta \log GDP$			4.455 ** [2.130]	8.111 *** [2.570]	8.742 ** [3.401]	
POLITY					2.021 *** [0.767]	

* Significant at 10% ; ** significant at 5% ; *** significant at 1%.

Robust standard-errors are between brackets.

1.6. Conclusion

This paper aims to shed light on the question of why a country decides to set up a SWF, and more precisely, why a country decides to set up a specific type of fund. Using theories relative to optimal policy of investments and savings in resource-rich countries and/or in countries with foreign exchange reserves, we test the economic, political and institutional country factors explaining the decision to establish a SWF. More precisely, we test if the establishment of a SWF can be explained by the following factors : 1) the excess foreign exchange reserves due to natural resources rents or persistent current account surpluses ; 2) the volatility of commodity prices ; 3) a way to mitigate the "Dutch Disease" effects ; 4) the governance of the country. In order to allow the temporal dimension as well as the unobserved heterogeneity between countries, a Logit panel model with random effects is estimated.

Several insights emerge from our analysis. When considering SWFs altogether, our results unsurprisingly show that the probability of setting up a fund is positively related to the country's enrichment and to revenue inflows, i.e. excess foreign exchange reserves due to natural resources rents for resource-rich countries and current account surplus for non-commodity countries. It means that countries with large excess cash flows may allocate these funds to a SWF. These findings are in line with Aizenman & Glick (2009) and Carpentier & Vermeulen (2014). Moreover, our empirical analysis provides some evidence of the Dutch Disease theory. In particular, our results show that resource-rich countries knowing an appreciation of the REER are more likely to establish a commodity-based fund. The aim of such a fund is to invest the proceeds from natural resources and fiscal surplus wholly abroad in order to reduce the appreciation of the REER and therefore to mitigate the Dutch Disease effects. Saving the proceeds abroad in a fund can therefore assist in mitigating Dutch Disease and related macroeconomic consequences, as proposed by Corden (2012). Finally, we find that the decision of setting up a SWF for

a country has not only an economic dimension but that it also has a political dimension. In particular, our results suggest that highly corrupted countries are more more likely to create a SWF, and this is particularly the case for resources rich corrupted countries.

Interestingly, splitting our sample in order to take into account the heterogeneity among SWFs brings out some interesting results. We find indeed that the characteristics driving SWFs creation are different depending on the type of fund (commodity vs. non-commodity) or the objective(s) assigned to the fund. This imply that considering SWFs as a homogeneous group of investors is misleading and may lead to biased conclusions. Surprisingly, it appears that having excess reserves is not a prerequisite to SWFs creation in the case of macrostabilization funds and saving funds, which means that SWFs are not always a mean of managing excess reserves. The creation of macrostabilization funds can indeed be explained by the changes in oil prices as the aim of these funds is to diversify the economic exposure of countries dependent on a single commodity like oil. At last, our results confirm that the decision of setting up a SWF for a country has a political dimension. In particular, our results suggest that non-democratic countries and/or highly corrupted countries are more more likely to create reserve investment funds and development funds.

As a whole, our results provide some explanation on why a country decides to create a SWF and more precisely why a country decides to set up a specific type of fund. Our results may be of interest for policymakers debating whether or not it can be optimal for the country to establish a SWF. The question of whether the creation of a SWF is an efficient solution to manage excess foreign exchange reserves and therefore to mitigate the Dutch Disease effects but also to fight against corruption can be pursued in a further extended research. Furthermore, it would be interesting to pursue this analysis by focusing on the relevant level of excess reserves, natural resources rents or institutional factors in setting up SWFs. Finally, further research projects could have a predictive dimension : what economic changes may lead to SWFs creation in the future (oil prices

shocks, changes in political regimes, changes in exchange rates, etc.) ?

Country Factors and Investment Decision-Making Process of SWFs

This paper is a joint work with B. Candelon, C. Lecourt and Z. Xun.

Abstract

We examine in this paper the complex decision-making processes that leads to investment location choice of sovereign wealth funds (SWFs). Using a two-tiered dynamic Tobit panel model, we find that country-level factors do not have the same impact on the investment decision and the amount to invest and that SWFs tend to invest more frequently and with higher amounts in countries in which they already have invested. More specifically, we find that SWFs prefer to invest in countries with higher political stability, whereas they are more prone to invest for large amounts in countries that are less democratic and more financially opened. Our results also lend support to the idea that SWFs are prudent in the choice of target country concerning their investment decision but behave as more opportunistic investors concerning the amounts to be invested.

Keywords : Sovereign Wealth Funds ; Targeted Countries ; Macroeconomic country Factors ; Two-Tiered Dynamic Tobit Panel Model

JEL classification : C33 ; C35 ; E61 ; G23 ; F39 ; G3

2.1. Introduction

Sovereign wealth funds (SWFs), that are "*government-owned investment funds set up for a variety a macroeconomic purposes*" (IMF (2008)), have recently attracted considerable attention in the literature. Many countries have set up SWFs for different macroeconomic purposes, such as stabilisation, saving for future generations or investments in long-run economic projects (such as infrastructure or education). The resources controlled by these funds, estimated to be USD 7.3 trillion by the Sovereign Wealth Funds Institute in June 2017, have tremendously grown over the past decade, benefitting from high oil prices, financial globalisation and sustained global large imbalances. While the size and rapid growth of SWFs suggest that they have become major players in the finance world, buying large stakes in companies and giving government's exposure to sectors they may otherwise be unable to achieve, their objectives and behavior are not well understood. In particular, the opaqueness surrounding their structure and activities appear as a major concern in host countries, for which it is unclear whether SWFs behave like governments or institutional investors.

Following the rapid expansion of SWFs, financial economists attempted to understand better the decisions taken by this new class of investors. This task is not easy because some SWFs are particularly opaque on their objectives or their functioning. In addition, the whole process of investment decision strategy is complex in the sense where it combines several dimensions that may potentially interact. A first important dimension regarding the SWFs investment activity concerns the determinants of investment decision : Why do SWFs invest in target firms ? In which country do they concentrate their investments ? Although these questions have been extensively explored over the recent years in the empirical literature, much still need to be known to fully understand the behavior and investment strategy of these fast growing investors. Most studies generally try to connect the investment's decision with the characteristics of the target countries, by investigating in particular the factors driving SWFs investments in foreign targets

countries. Some papers assess whether these factors are macroeconomic (Ciarlone & Miceli (2014), Knill et al. (2012b), or Megginson et al. (2013)) or political (Bernstein et al. (2013), Knill et al. (2012b)). Other empirical studies have also stressed the link between the characteristics of the fund like for example its size, its degree of opacity, the nature of the fund (commodity versus non-commodity) and its investment decision (Knill et al. (2012b)). These studies conclude that SWFs investments could be distorted by the characteristics of the fund and the targeted countries and especially by political and agency considerations.

Another dimension of SWFs investment decision-making process pertains to the way they are going to invest. In what type of firms to invest? For what amount? Existing empirical studies dealing with this dimension generally focused on the financial characteristics of the firm (for example the size and the risk of the firm) as determinants of SWFs strategy (Fernandes (2011), Kotter & Lel (2011)). In the same spirit, Johan et al. (2013) attempt to measure the choice of SWFs for investing in public versus private global firms and show that SWFs invest not only in privately held firms, but also in privately held firms internationally.

This literature ends in some conflicting results which may be explained by the complex decision-making process of SWFs which leads imperfect econometric specifications. Knill et al. (2012b) and Ciarlone & Miceli (2014) show that the investment decision of SWFs may be thought of taking place in two stages : first the fund decides to invest, and then it decides how much to invest. However, these cross-sectional analysis don't take into account the temporal dimension that is necessary for explaining the number of SWFs cross-border investments by year, and the unobserved heterogeneity between the different SWFs.

Most importantly, none of the analysis cited above take into account the persistence phenomenon in the investment decision process of SWFs. A SWF may be indeed more prone to invest in a country in which it has already invested in because it is already informed about this target country.

The aim of this paper is to contribute to this existing literature to understand better the decision-making process that leads to investment location decision of this new class of investors. More specifically, we develop an approach that takes into account the two-stages nature of the investment decision-making process of SWFs as well as the persistence phenomenon. In particular, we investigate whether and to which extent country-level factors play a role in this investment decision-making process. As SWFs are investment funds owned by the government and have a capacity to operate over a long-term investment horizon, we analyze whether they act as prudent investors by preferring to invest in countries in which they have either information advantage or perceived familiarity in terms of macroeconomic, institutional and cultural characteristics, and in countries they have already invested in.

Using a new database over the recent period 2000 – 2014, we examine 609 foreign equity investments done by 29 SWFs from 15 countries in 72 target countries. Based on the recent paper of Xun & Lubrano (2015), we adopt a sophisticated two-tiered dynamic panel Tobit model in order to estimate : i) in one equation the decision of the SWFs to invest in a particular country and in the second equation the amounts to be invested that are conditional on the investment decision ; ii) the dynamic component in the model.

We contribute to the existing literature in several ways. First, we shed light on the country-level factors governing the SWFs cross-border investment decision. In particular, we try to explain the motivation of SWFs to invest in one particular country by considering geographic, economic and institutional distances between acquiring and target countries. Second, we estimate jointly the decision to invest and the amounts to be invested. Third, we test if there is a persistence phenomenon in SWFs investment strategy. For that, we estimate a two-tiered dynamic Tobit model with panel data in order to take into account the temporal dimension in the SWF's investment decision, the unobserved heterogeneity between the different SWFs and the persistence phenomenon in their investment decisions.

Anticipating on our findings, we find that SWFs investments are driven by country-level factors. This paper also shows that the determinants of the investment decision are different from those driving the amount of the investments, motivating the use of the two-tiered Tobit panel model to investigate this issue. In particular, our results lend support to the idea that SWFs are prudent in the choice of target country concerning their investment decision but behave as more opportunistic investors concerning the amounts to be invested. At last, our findings exhibit a persistence in SWF investment strategy, which means that SWFs have a tendency to invest again and for the same amounts in the following years in the target country once the decision to invest has been taken.

The paper is organized as follows. Section 2.2 introduces the theoretical framework as well as the hypotheses for analyzing SWFs investment decisions abroad. Section 2.3 provides some details regarding the data. Section 2.4 presents the econometric methodology (two-tiered dynamic panel Tobit model), Section 2.5 reports our empirical findings and Section 6 concludes.

2.2. Theoretical framework and empirical hypotheses

There is an extensive recent literature that investigates what factors might be driving SWF investment decisions. In particular, as they are state-owned investment funds which may be managed either by the ministry of finance or by a board composed of government officials, their investment strategy may be not only commercially oriented, but also politically biased. We report this literature and show how it opens the way to new research on the identification of SWFs investments determinants.

H1 - SWFs tend to invest in countries which share the same macroeconomic, geographical, institutional and cultural characteristics as their.

As SWFs are state-owned actors, they might be incited to deviate from the objectives normally associated with private-sector investors and make investment decisions other than financial. Some papers find that some factors driving SWFs investment decisions may be considered as evidence of the political orientation of SWFs investment strategies (Ciarlone & Miceli (2014); Dyck & Morse (2011) among others). Dyck & Morse (2011) show that a part of SWFs portfolio is oriented toward the development of its country, indicating that investment decisions of SWFs may be distorted by political considerations. Ciarlone & Miceli (2014) show that SWFs investment strategy is different from other Institutional Investors. More precisely, they find that SWFs are more likely to invest in countries experiencing a financial crisis. Contrary to other institutional investors, especially mutual funds, SWFs tend to invest in a contra-cyclical way.

Relying on the empirical literature on Foreign Direct Investments (FDIs) (see among others Anderson & Van Wincoop (2003), Stulz & Williamson (2003) and Kang & Kim (2008)), some authors have studied the phenomenon of home and familiarity bias in the decision-making process of SWFs. Chhaochharia & Laeven (2009) and Megginson et al. (2013) show that SWFs invest predominantly in countries that share the same culture. Knill et al. (2012b) find that SWFs are more likely to invest in countries close to them in terms of geographical distance and with which they have weak political relationships. These results imply that SWFs should prefer to invest in regions or countries in which they have either information advantage or perceived familiarity in terms of cultural, institutional or macroeconomic characteristics. For that, we test whether the characteristics and attributes of the target country are different from the SWF countries, considering the geographic distance but also macroeconomic, institutional and cultural characteristics.

If cultural, institutional and macroeconomic differences are associated with more asymmetric information, we expect that the more the target country shares similar charac-

teristics with the SWF country, the more the fund will tend to invest in this country. In the same way we predict that closer geographic proximity will be associated with more investment deals between country pairs.

H2 - Target country factors do not have the same impact on the investment decision and the amount to invest.

Some paper analyzing the drivers of SWFs investments underline the complex decision-process of these investors. Knill et al. (2012b) and Ciarlone & Miceli (2014) consider indeed that the investment decision of SWFs may be thought of taking place in two stages. In the first stage, the fund decides to invest, and in the second stage, it decides how much it will invest. However, Knill et al. (2012b) estimate a Cragg model (Cragg (1971)) with cross-section and not panel data and without dynamic component in their model. Ciarlone & Miceli (2014) use panel data but they analyze the decision to invest and the amount to be invested using two different models.

In line with this literature, we consider the complex decision-making process of SWFs investments by analyzing their investment decision (Invest or not) and the amount to invest, using a two-tiered model with panel data. We then test this two-stages nature of the investment decision of SWFs and we expect country-level factors to have a different impact in the investment decision and the amount to invest.

H3 - SWFs tend to invest more frequently and with higher amounts in countries in which they already have invested.

Related to H1, if a SWF chooses to invest in a country sharing similar characteristics, it is likely that it will continue to invest in this country in the future because it is already informed about this target country. In this way, it avoids search and informational costs for investing in this country. We would like to test if there is a learning effect in the SWF investment decision making-process, in the way that once an investment decision

is taken, it is likely that the following years the SWF still invests in the same country for similar amounts :

We expect that once an investment decision is taken, it is likely that the following years the SWF continues to invest in the same target country for similar amounts as learning effect.

2.3. Data and descriptive analysis

2.3.1. The SWF sample

There is no consensus, in either the academic or practitioner literature, on exactly what is a SWF. A unanimously accepted definitions is the one given by the International Monetary Fund (IMF (2008)), according to which *"SWFs are government-owned investment funds set up for a variety a macroeconomic purposes"*. Considering the lack of consensus on the definition of a SWF as well as the lack of transparency in the methodologies used in the existing empirical literature to collect data, we have decided to construct a unique database from scratch using the following methodology.^a

Considering this definition, we conducted a search of all existing SWFs by using different sources in order to have the most complete list. We start with a preliminary sample of SWFs given on the SWF Institute website^b by combining the names of funds published by JP Morgan (Fernandez & Eschweiler (2008)), Catalano (2009), Lyons (2007), ESA-DEgeo studies on SWFs published every year (see for example Santiso (1995)) and the websites of the SWFs. When different names for the same SWF are found, we employ the fund's websites to eliminate duplicates. Moreover, we consider a fund as active if it has made at least one publicly-reported investment internationally. As many funds have been created and announced on the websites but are not active, this search yields a

a. For example, the Sovereign Investor Institute's Sovereign Wealth Center includes 32 funds in its database whereas the SWF Institute retains 78 SWFs.

b. <http://www.swfinstitute.org/>.

sample of 89 existing SWFs in 2013, but only 29 of these funds from 15 countries are retained for the analysis.^c Details on these 29 funds are presented in appendix B.1.

2.3.2. Investment data

We construct our sample of SWFs investments in listed firms by using two different sources. First, a search in the financial database Thomson Reuters Eikon Mergers and Acquisitions of all known SWFs and their subsidiaries is performed in order to identify transactions involving SWFs. Second, we use the online database Factiva to complete the missing acquisitions. Investment data are extracted for both the SWFs and their wholly owned subsidiaries.^d The features of each transaction are collected : information about the targeted firms (name, country), information about the SWFs (name, subsidiary, country), the date of the transaction, the pre- and post-acquisition share of the investment in the target firm and the value of the deal.

Table 2.1 presents summary statistics - overall and by year - on the number and total value of cross-border SWF deals. The combined sample of both sources from 2000 to 2013 allows to capture 609 cross-border acquisitions with a total value of USD 278,406 million by 29 SWFs.^e As described in Table 2.1, the number of SWF cross-border investments tremendously increased from 2005 to 2007 with fast-growing influxes of revenue combined with the search for better returns and reached a peak in 2007, with 118 investments representing about 19% of the total of the foreign transactions over the period 2000-2013.^f During the crisis, many funds shifted their investment strategies, retrea-

c. As our analysis focuses on the investment amounts, we only retain cross-border transactions for which the deal value is available.

d. Newswires cited above report information regarding the name of the fund, the name of the subsidiary, the name of the target firm and the size of the stake.

e. The Norway's Government Pension Fund Global (GPF) has done a great number of small stakes in listed companies overall the considered period through open market share purchases (more than 55,000 investments with stake's size less than 2%). This is the reason why we choose to remove it to the database. All the investments and their market value are given by the Norway's Government Pension Fund Global on its website : <http://www.nbim.no/en/Investments/holdings>.

f. In 2007, SWFs emerged as major players on the world financial markets, mostly when they pumped USD 60 billion into Western banks during the financial meltdown.

Table 2.1. – **Annual distribution of SWFs foreign investments**

This table presents the number of deals and the total deal value by year of cross-border investments led by SWFs (excluding Norway). Column 3 gives the proportion of the number SWFs investments made year t among all the investments made over the period 2000-2013. Column 5 gives the proportion of the value of SWFs investments made year t among the total value of SWFs foreign investments over the period 2000-2013.

Year	Number of foreign investments	Proportion (Number of deals)	Total value of foreign investments (USD million)	Proportion (Amount)
2000	17	2.8%	3,665.9	1.3%
2001	4	0.7%	9,260.7	3.3%
2002	8	1.3%	898.9	0.3%
2003	13	2.1%	2,713.3	1.0%
2004	13	2.1%	5,108	1.8%
2005	42	6.9%	11,727	4.2%
2006	87	14.3%	20,885.3	7.5%
2007	118	19.4%	43,302.7	15.6%
2008	36	5.9%	58,860.4	21.1%
2009	34	5.6%	21,415.4	7.7%
2010	60	9.9%	24,911.5	8.9%
2011	41	6.7%	28,238.2	10.1%
2012	94	15.4%	32,539.1	11.7%
2013	42	6.9%	14,880.3	5.3%
Total	609	100%	278,406.7	100%

ting from foreign markets and increasing domestic investments. The number of foreign investments sharply drop in 2008 even if the volume of investment activity remained substantially high (the total value of SWFs investments in 2008 represents 21.1% of the total value of SWFs investments over the period 2000-2013). In the recent years, SWFs continue to intervene actively abroad both in number and in amounts, with 15% of the total of the foreign transactions for only year of 2012.

Table 2.2 presents the distribution of SWF cross-border investments in value and amounts done by the 15 SWF countries and shows that the majority of the most active SWFs are located in Asia and in the Middle East. Singapore made more cross-border investments than any other country (265 foreign deals which represents 43.5% of all SWF investments by number and 36.07% by value) followed by SWFs from the United Arab Emirates (21.8% of deals, 30.8% of value)^g, Qatar (14.3% of deals, 12.07% of

g. The Abu Dhabi Investment Authority (ADIA) is considered as the second biggest fund.

2.3. Data and descriptive analysis

Table 2.2. – **Geographic distribution of SWFs foreign investments - Acquirer countries**

This table presents the number of deals and the total deal value by country of cross-border investments led by SWFs (excluding Norway) over the period 2000-2013. Column 3 gives the proportion of the number SWFs investments made by SWFs from country j among all the investments made over the period 2000-2013. Column 5 gives the proportion of the value of SWFs investments made by SWFs from country j among the total value of SWFs foreign investments over the period 2000-2013.

	Number of foreign investments	Proportion (Number of deals)	Total value of foreign investments (USD million)	Proportion (Amount)
Australia	4	0.7%	477.8	0.17%
Bahrain	1	0.2%	46.0	0.02%
China	43	7.1%	34,521.9	12.4%
France	2	0.3%	167	0.06%
Kazakhstan	2	0.3%	299.1	0.11%
Kuwait	14	2.3%	12,340.8	4.43%
Libya	7	1.1%	1,054.3	0.38%
Malaysia	25	4.1%	5,108.7	1.83%
New Zealand	3	0.5%	184.7	0.07%
Oman	16	2.6%	1,916.3	0.69%
Qatar	87	14.3%	33,600.9	12.07%
Saudi Arabia	4	0.7%	376.2	0.14%
Singapore	265	43.5%	100,422.4	36.07%
South Korea	3	0.5%	2,146.5	0.77%
UAE	133	21.8%	85,744.2	30.8%
Total, excluding Norway	609	100%	278,406.7	100%

value) and China (7.1% of deals, 12.4% of value). We can observe that funds of Kuwait made few investments compared to the others (2,3% of deals) but with large amounts (4.43% of all investments by value).

At last, Table 2.3 outlines the geographical distribution of SWF country investments by number (Panel A) and by amount (Panel B) in target firm regions. The clear trend revealed by this table is the SWF's preference to invest in the developed countries of North America (18.23% of total deals, 27.63% of value) and West Europe (26.6% of total deals, 32.91% of value), particularly in the English common law countries of Canada, the United States and Great Britain. This is clearly the case for SWFs from the United Arab Emirates, Qatar, China and to a lesser extent Singapore which have invested (in number and in value) in both regions over this period. The other target regions are Far East (14.78% of total deals, 9.33% of value) and Indian Subcontinent (13.63% of total deals, 6.12% of value). The fact that the majority of SWFs investments are targeted towards

developed countries with safe institutions, high revenues and financial regulation reveal that macroeconomic factors matter in their investment decision. The second less clear trend is the tendency of SWFs to invest in their own geographical region. More precisely, SWFs from Middle East and South Asia also have a preference to invest in their own geographical region even if they seem to have a strategy of geographical diversification. Note that geographical diversification of SWF cross-border investments is sometimes really different in number and in amounts, which suggests that the SWF decision to invest in a particular country and the decision about the amount to invest in this country are not based on the same criteria. A revealing example is the only stake done by the fund of Qatar in Central and South America but for an impressive amount of USD 2,716 million.^h

h. Qatar Holding invested USD 2,716 million in Banco Santander Brazil, which represents 5% of stakes.

2.3. Data and descriptive analysis

Table 2.3. – Geographical distribution of SWF foreign investments - Targeted countries

This tables present the number and value of cross-border investments made by SWFs originated from country j to target firms in region k over the period 2000-2013. Panel A gives the number of deals, Panel B gives the total amount invested in USD billion.

Panel A : Number of Investments																			
SWF countries		Target firm regions																	
		Africa	Caribbean	Central & South	Central	Central	Europe	Europe	East	Far	Indian	Middle	North	North	Oceanic	South	South	West	Total
		West Indies	America	Asia	Europe	Europe	Europe	Europe	East	Subcontinent	East	America	Europe	Bassin	Asia	Europe	Europe		
Australia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4
Bahrain	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
China	8	1	1	7	0	0	0	2	0	0	0	12	0	4	2	6	43	6	43
France	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
Kazakhstan	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	2	2
Kuwait	0	0	0	0	0	0	0	0	3	2	2	5	0	0	0	2	14	7	14
Libya	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	4	0	4	7
Malaysia	0	0	0	0	0	0	0	0	5	7	4	0	0	0	9	0	25	0	25
New Zealand	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0	0	3	0	3
Oman	0	0	0	0	0	0	0	1	0	7	1	0	0	1	2	4	16	4	16
Qatar	0	0	1	0	0	0	0	1	0	4	2	7	1	0	2	69	87	4	69
Saudi Arabia	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	4	1	4
Singapore	3	0	5	2	1	0	0	0	73	53	0	49	2	21	28	28	265	28	265
South Korea	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0	3
UAE	4	0	4	0	2	0	0	5	0	10	10	29	5	6	16	42	133	0	133
Total	17	1	11	10	3	1	90	83	21	83	21	111	8	32	59	162	609	162	609
Proportion	2.79%	0.16%	1.81%	1.64%	0.49%	0.16%	14.78%	13.63%	3.45%	18.23%	1.31%	5.25%	9.69%	26.60%	100%				

Panel B : Value of Investments																				
SWF countries		Target firm regions																		
		Africa	Caribbean	Central and South	Central	Asia	Europe	Europe	East	Far	Indian	Middle	North	America	Europe	North	Oceanic	South	East	West
Australia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	478	478
Bahrain	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	46	46
China	1,258.5	850	200	6,622	0	0	0	1263	0	0	0	15,988	0	15,988	0	1,670	1,004	6,167	34,522	34,522
France	0	0	0	0	0	0	0	0	0	0	0	167	0	167	0	0	0	0	167	167
Kazakhstan	0	0	0	0	0	0	0	0	0	0	0	166	0	166	0	0	0	133	299	299
Kuwait	0	0	0	0	0	0	0	981	0	3,600	117	6,450	0	6,450	0	0	0	1,194	12,341	12,341
Libya	44.8	0	0	300	0	0	0	0	0	0	0	320	0	320	0	0	0	390	1,054	1,054
Malaysia	0	0	0	0	0	0	0	353	603	730	0	183	0	183	0	0	3,423	0	5,109	5,109
New Zealand	0	0	0	0	0	0	0	1.8	0	0	0	79	0	79	0	2.5	86	1,187	1,916	1,916
Oman	0	0	0	0	0	0	0	129	0	434	800	247	1,958	44	0	0	2,389	25,366	33,601	33,601
Qatar	0	0	2,719	0	0	0	0	78	0	800	155	200	0	200	0	0	154	376	376	376
Saudi Arabia	7,625	0	0	0	0	0	0	0	0	0	0	24,268	360	24,268	360	16,683	4,256	22,995	100,422	100,422
Singapore	2,693	0	1,010	412	43	0	0	21,701	6,000	0	0	2,147	0	2,147	0	0	0	0	2,147	2,147
South Korea	0	0	0	0	0	0	0	0	0	0	0	930	25,249	6,126	3,402.9	8,212	33,518	85,744	85,744	
UAE	6	0	750	0	361	0	0	1,591	5,598	17,035	2,283	76,929	6,531	76,929	6,531	21,258	19,369	91,625	278,406	278,406
Total	4,010	850	4,679	7335	404	128	25,967	17,035	6,12%	0.82%	27.63%	2.35%	7.64%	32.91%	100%					
Proportion	1.44%	0.31%	1.68%	2.63%	0.15%	0.05%	9.33%	6.12%												

2.4. Methodology : the two-tiered dynamic Tobit panel model

In this paper we estimate a two-tiered dynamic Tobit panel model developed by Chang (2011b) and improved by Xun & Lubrano (2015). The choice of this model offers many advantages to better evaluate the decision-making process that leads to investment location of SWFs. First, the "two-tiered" dimension allows the distinction between the decision to invest and how much the SWF invests. Second, the SWF decision to invest in a particular country may also be persistent over time. It means that if a first investment has been made in year t , intimacy links are created and it is likely that the SWFx will invest again in the future. Therefore, the dynamic component is included via an autoregressive term in the first but also the second decision. At last, the panel dimension in the model allows to take into account two central aspects : i) the temporal dimension that is necessary for explaining the number of SWFs cross-border investments by year in our sample ; ii) the unobserved heterogeneity between the different SWFs. This hypothesis is fundamental because SWFs form a heterogeneous group of investors, explained with respect to the various sources of their funds, their size in terms of assets under management, their organisational structure, their governance and their assigned objectives. In the same way, the inclusion of individual random effects in the panel model allows to control for omitted variables.

Before describing the two-tiered dynamic Tobit panel model, let us consider the one-tiered dynamic Tobit model for panel data and autocorrelated errors developed by Chang (2011a) Chang (2011a) which is written as :

$$y_{it}^* = x_{it}\beta + y_{it-1}\lambda + \epsilon_{it}, \quad (2.1)$$

$$y_{it} = \max(y_{it}^*, 0), \quad (2.2)$$

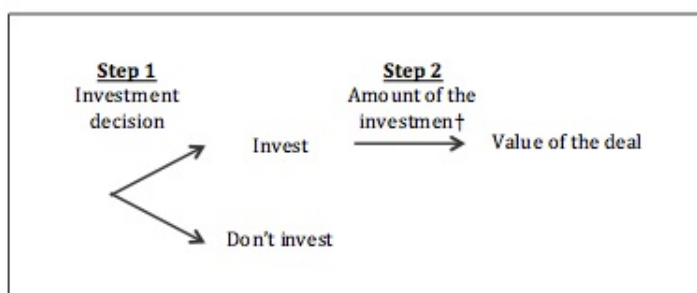
where y_{it}^* is a latent dependent variable, x_{it} a vector of exogenous variables, y_{it} an observed dependent variable and ϵ_{it} an idiosyncratic error which varies across time and

individuals. The error term is assumed to have the following structure :

$$\epsilon_{it} = c_i + u_{it}, \quad (2.3)$$

where c_i is an unobserved individual random effect which is constant over time, u_{it} is an idiosyncratic error which varies across time and individuals.

Figure 2.1. – SWF investment decision-making process



One potential restriction of traditional Tobit models lies in the fact that the decision related to $y = 0$ versus $y > 0$ is inseparable from the decision concerning the amount of y given that $y > 0$. In order to relax this restriction, Cragg (1971) proposed a two-tiered model to allow the parameters which characterize the decision regarding $y > 0$ versus $y = 0$ to be distinct from the parameters that determine the decision regarding how much y is given that $y > 0$. We can say that traditional Tobit models can be viewed as a special case of the Cragg's two-tiered model. That means that the Cragg's two-tiered model is based on two assumptions. First, a Probit model gives the probability of a zero observation with the first tier parameters and then the density of the dependent variable that is conditional on being a positive observation is truncated at zero and characterized by the second tier parameters. Chang (2011b) extended the Cragg's model by introducing the dynamic component in the model. It has to be noticed that we include the same explanatory variables in each step of the two-tiered model.

In our specification, if we consider $y_{ij,t}$ an observed dependent variable representing the USD average amount of investments in country i from SWFs in country j in year

t , the SWFs investment decision should be considered as a two-step process : : the first step is a binary decision, either $y_{ij,t} > 0$ or $y_{ij,t} = 0$. This is only in a second instance, once the green light for the investment has been given, that the SWF decides about the amount to be invested in the specific country. Figure 2.1 illustrates the SWF investment decision-making process taken into account in a two-tiered model.

Taking into account the rich dynamic structure in the model allows to test the persistence phenomenon in the investment decision process, i.e. the fact that SWFs may invest again and for the same amounts in the following years in the same target country once the decision to invest has been taken. The introduction of lagged dependent variable and serially correlated errors in a dynamic panel Tobit model has the effect of making not applicable the conventional estimation techniques used in the panel data models. Chang (2011b) proposes to estimate the dynamic Tobit panel model with the random effects approach. The random effects estimators are obtained through maximizing the corresponding likelihood function by specifying the distribution of the error conditional on the regressors. However, the dimension of the integral involved in the calculation of the likelihood function of the dynamic Tobit model, which is as large as the number of censoring periods in the model, makes this likelihood function usually intractable. To deal with this problem, Chang (2011b) proposes a maximum simulated likelihood procedure through the correlated random effects approach for the two-tiered dynamic Tobit model using the Geweke-Hajivassiliou-Keane (GHK) simulator. In a very recent paper, Xun & Lubrano (2015) show however that the use of Heckman's initial conditions combined with latent state dependence leads to computational difficulties and a wrong specification of the true state dependence. They thus propose to follow the treatment of initial values proposed by Wooldridge (2005) Wooldridge (2005).

We consider a two-tiered dynamic Tobit panel model initiated by Chang (2011a,b) and completed by Xun & Lubrano (2015).

We then estimate :

$$\begin{cases} \text{First tiered} & \Leftrightarrow P(y_{ij,t}^* > 0) \\ \text{Second tiered} & \Leftrightarrow E(y_{ij,t}^* | y_{ij,t}^* > 0) \end{cases} \quad (2.4)$$

using the following modelisation of $y_{ij,t}^*$:

$$y_{ij,t}^* = x'_{ij,t}\beta + y_{ij,t-1}\lambda_1 I_{ij,t}(y_{ij,t-1} > 0) + \lambda_2 I_{ij,t}(y_{ij,t-1} = 0) + c_i j + u_{ij,t} \quad (2.5)$$

With $I_{ij,t}$ the indicator function defined as :

$$I_{ij,t} = \begin{cases} 1 & \text{for } y_{ij,t}^* > 0 \\ 0 & \text{for } y_{ij,t}^* = 0 \end{cases}$$

Our dependent variable has three indices : i) i , the country of the SWF ; ii) j , the target country ; iii) and t , the time. This allows us to take into account in our estimates, on the one hand, the characteristics of the SWF's country as well as the characteristics of the target country in the same model, and on the other hand, the temporal dimension.

For the two-tiered model, using Wooldridge's approach for initial conditions, the c_i are extended as follows. For the decision to invest, we have :

$$c_{i1} = d_i + y_{ij,0}\delta_{11}I_{ij,t}(y_{ij,0} > 0) + \delta_{12}I_{ij,t}(y_{ij,0} = 0) \quad (2.6)$$

while for the amount to be invested :

$$c_{i2} = d_i + y_{ij,0}\delta_{21}I_{ij,t}(y_{ij,0} > 0) + \delta_{22}I_{ij,t}(y_{ij,0} = 0) \quad (2.7)$$

Using four different δ s allow for a better modeling of the influence of the initial conditions.

To estimate the model, Chang (2011b) proposes to maximize the log-likelihood function simulated through procedures based on a recursive algorithm formulated by the

Geweke-Hajivassiliou-Keane simulator.

The simulated likelihood function with R simulation draws based on the GHK simulator for country pair ij can be described as :

$$L_i = \frac{1}{R} \sum_{r=1}^R \prod_{t=1}^T [f^{(r)}(y_{ij,t}|y_{ij,t-1}, d_i, x_{ij,t})]^{I_{ij,t}} \times [P^{(r)}(I_{ij,t} = 0|y_{ij,t-1}, d_i, x_{ij,t})]^{1-I_{ij,t}} \quad (2.8)$$

In our specification, the two-tiered structure implies that the probability of the investment decision ($Prob(y_{ij,t}^* > 0)$) is computed with a first set of parameters $(\lambda_1^1, \lambda_1^0, \beta_1)$, while the amount to be invested (i.e. the conditional expectation of $y_{ij,t}$), conditioned on the decision of investment is determined by a second set of parameters $(\lambda_2^1, \lambda_2^0, \beta_2)$. As we have two equations and we do the distinction between censored and uncensored events, we have four different values for the λ s when using Wooldridge's specification for the initial values.ⁱ These four parameters indicate respectively the persistence of the investment decision and the amount invested. All the other parameters (error variances of d_i and u_{it}) are common to both steps.

i. The interpretations of the true state dependence terms are straightforward : they control for the level of state dependency of previous state (dependents on whether it was an occurred event $I(y_{i,t-1} > 0)$ or a null event $I(y_{i,t-1} = 0)$, since an occurred event and a null event has different nature as well as different recorded scaling) upon current state.

2.5. Empirical part

2.5.1. Description of the macroeconomic variables

The two-tiered dynamic Tobit panel model described in equations (2.4) and (2.5) is estimated for a large set of explanatory variables covering the macroeconomic, geographic, financial, institutional and cultural sectors. The selected macroeconomic variables are the annual GDP growth rate (*GDP*), the inflation rate (*INFLATION*) and the real effective exchange rate returns (*REER*). As financial variable, we consider the Chinn-Ito index (*KAOPEN*) measuring the country's degree of capital account openness. Institutional variables measuring the level of political risk are corruption (*CORRUPTION*) and the government stability (*GOV STAB*).^j *POLITY* is the democracy level difference between the SWF country and target country as defined by the polity IV database. *RELIGION* is a dummy variable equal to one if the nations have the same major religion and zero otherwise. *DIST* is a variable measuring the geographic distance between acquiring and target country. As in Karolyi and Liao (2017) and Knill et al. (2012b), we use for these variables the difference between the SWF and target nation. Analyzing country-pairs is necessary to calculate the bilateral "difference" between explanatory variables as well as the dependent variable. We try to test whether geographic distance but also variables illustrating economic and institutional distance are determinants of SWF investment decision as in a gravity model.^k Country-pairs variables are computed as :^l

$$x_{ij,t} = x_{j,t} - x_{i,t} \quad (2.9)$$

with $j = 1, \dots, 15$ the SWFs countries and $i = 1, \dots, 72$ the target countries.

j. As *GOV STAB* represents the government ability to carry out its declared program, and its ability to stay in office, this variable is generally lower for democratic countries than for autocratic regimes.

k. Gravity models are often used in the international trade literature in order to analyse the determinants of bilateral trade flows. However, this type of model is not well suited for SWF investment flows that are frequently equal to zero.

l. Country-pairs variables measuring the geographic, economic and institutional distance between the SWF country and the host country, have also been tested in absolute value. Results of the model with all these variables taken in absolute value are unchanged. They are not reported in the paper to save space but are available upon request.

We also consider control variables representing the SWF characteristics like the size of the fund (*LARGE*), the origin of the fund (*COMMODITY*) and the presence of politicians on the board (*POLITICIANS*). *LARGE* is a dummy variable equal to one if the assets under management of a SWF are superior to USD 100 billion. *COMMODITY* is a dummy variable equal to one if the funds originate from natural resources, and *POLITICIANS* is a dummy variable that indicates if there is a presence of politicians in the governance of the fund. We predict the variable *LARGE* positively related to SWF investment decision and mostly to the amount decision. We expect *COMMODITY* to be positively related to SWF investment decision abroad as countries with natural resource rent need to cover from commodity prices fluctuations and to prevent from Dutch disease. More precisely, a commodity SWF that invests the proceeds from natural resources and fiscal surplus wholly abroad can mitigate the Dutch Disease phenomenon and related macroeconomic consequences due to diversification effect.^m We also expect the variable *POLITICIANS* negatively related to investment decision : SWFs with greater political involvement tend to support domestic firms rather than investing abroad, as found by Bernstein et al. (2013) Bernstein et al. (2013). Appendix B reports the source and the definition of each variable employed in our study. The correlation between these variables is low, stressing that the information does not need to be condensed in a subset of variables.ⁿ

Table 2.4 reports the summary statistics concerning the variables of the model. First, we can see that our panel data are extremely large (14,924 observations) compared to other studies based on cross sectional data.^o Second, the proportion of country-years with SWF investment is 2,1%, which means that 97,9% of the dependent variable observations are equal to zero. The fact that the dependent variable is left censored at zero with a great number of observations equal to zero justifies the choice of the Tobit model

m. See Corden & Neary (1982) for more details on this question.

n. For sake of space we do not report the correlation coefficients, but these results are available upon request from the authors.

o. For example, Knill et al. (2012b) have 3,752 observations and Karolyi and Liao (2017) 1,482 observations in their model.

described above. Concerning SWFs characteristics, 96% of SWFs countries have at least one SWF managed by politicians and 86% have at least one large-sized SWF (upper to USD 100 billion). If we look at differences between target and acquiring countries characteristics, only 9% of acquiring countries have invested in countries with the same language but 17% of them invest in countries which share a common religion.^p Concerning the geographic distance, only 7% of the investments are made in close countries (less than 1,000 miles), which means that SWFs seem to be indifferent to the geographical distance in their investment decision making-process. Finally, we notice that 40% of the investing countries have at least one commodity fund, stressing the importance of natural resources in the decision to set up a SWF (Das et al. (2009)).

Table 2.4. – **Summary statistics**

This table provides the summary statistics for the variables used in our two-tiered dynamic Tobit model. Details on variables construction are detailed in appendix B.3.

	Mean	Median	Min	Max	Std Dev
SWF DUMMY	0.021	0	0	1	0.14
SWF DEAL	1.94	1	1	40	2.74
SWF AMOUNT	499.26	168.25	0.152	9,760	1,003.86
DIST	6,619.64	5,414.37	327.46	17,595.10	4,191.05
CLOSE	0.07	0	0	1	0.26
GDP	2.69	2.70	-12.82	24.16	5.48
INFLATION	-0.007	-0.19	-25.40	12.24	4.98
REER	4.82	1.06	-31.81	217.28	17.66
POLITY	-0.54	-0.6	-1	0.8	0.39
KAOPEN	0.12	0	-0.84	1	0.46
RELIGION	0.17	0	0	1	0.38
LANGUAGE	0.09	0	0	1	0.28
GOV STAB	1.98	2.13	-4.46	5.92	1.87
CORRUPTION	-0.23	-0.10	-3.5	3.5	1.64
COMMODITY	0.42	0	0	1	0.49
LARGE	0.86	1	0	1	0.35
POLITICIANS	0.96	1	0	1	0.21

p. As only 9% of acquiring countries invest in target countries with the same language, we do not consider this variable in the model.

2.5.2. Results

2.5.2.1. One-tiered versus two-tiered dynamic Tobit panel model

We would like to test the fact that target country factors do not have the same impact on the investment decision and the amount to be invested as justified in our Hypothesis 2. For that, we have estimated both models for comparison : the one-tiered dynamic Tobit model for panel data and individual random effects developed by Chang (2011a) Chang (2011a) described above in Equation (1) and (2) and the two-tiered dynamic panel Tobit model initiated by Chang (2011a,b), and completed by Xun & Lubrano (2015) described in equations (4) and (5). As explained above, unlike the one-tiered model, the two-tiered model allows the parameters which characterize the decision regarding $y = 0$ versus $y > 0$ to be separate from the parameters which determine the decision regarding how much y is given that $y > 0$. We implement Wooldridge's initial conditions with censoring for the lags for the one-tiered and the two-tiered models. The results of the one-tiered and two-tiered dynamic panel Tobit models with individual random effects are reported in Table 2.5.

Several elements illustrates the performance of the two-tiered dynamic Tobit panel model compared to the one-tiered. First, the log-likelihood function has a much higher value than that of the corresponding one-tiered model. Second, this model relaxes many constraints allowing the asymmetric effects between the two equations to be captured. In particular, variables capturing political distance between both countries like *POLITY* and *GOVSTAB* or the variable measuring the country's degree of capital account (*KAOPEN*) are significant in the two-tiered model but not in the one-tiered. At last, the individual effect parameters (λ 's) are significant in the two-tiered model but not in the one-tiered, which means that the dynamic component in the model is significantly different to zero only when we consider the two-tiered model. This suggests that ignoring the two-stage nature of the investment decision and assuming that the country

2.5. Empirical part

Table 2.5. – **One-tiered and two-tiered dynamic Tobit panel results**

This table reports results for the one-tiered and two-tiered dynamic panel tobit models . Column (2) gives the results of the one-tiered model, columns (3) and (4) report respectively the results for the first equation (decision to invest) and the second equation (amount to be invested) of the two-tiered model. The summary statistics of these variables are presented in Table 4. Appendix 3 presents details on variables construction.

	One-tier	Two-tier	
		Equation 1	Equation 2
CONSTANT	-112.600 *** [20.330]	-5.6680 *** [0.4553]	14.749 *** [0.711]
INFLATION	1.0870 ** [0.3593]	0.0023 ** [0.0079]	-0.0013 [0.0237]
REER	-0.1304 [0.0705]	0.0026 [0.0019]	0.0166 ** [0.0063]
POLITY	-11.6000 [6.349]	-0.8367 *** [0.2465]	-1.6312 *** [0.4714]
KAOPEN	14.8500 * [7.252]	0.3040 [0.1879]	-0.9840 *** [0.3402]
GOVSTAB	1.6390 [0.8935]	1.1410 *** [0.0353]	0.0520 [0.0740]
POLITICIANS	15.1500 * [7.0250]	0.3371 * [0.1436]	-0.0768 [0.2713]
DIST	-0.0011 * [0.0005]	-0.0001 [0.0001]	-0.0001 [0.0001]
GDP	0.0230 [0.2170]	-0.0001 [0.0065]	-0.0089 [0.0211]
CORRUPTION	-1.7880 [1.6400]	0.0066 [0.0536]	-0.0060 [0.1069]
RELIGION	-1.0280 [1.3340]	-0.2148 [0.2004]	-0.1517 [0.3693]
LARGE	30.0000 *** [8.0330]	0.0491 [0.1044]	-0.2088 [0.1987]
COMMODITY	-28.130 ** [9.1100]	-0.1817 [0.1193]	-0.1479 [0.2238]
λ_1	-37.9600 [34.5900]	0.1108 *** [0.0150]	0.0843 ** [0.0263]
λ_2	7.3310 [5.8070]	0.3811 [0.2416]	1.4477 ** [0.4956]
Log-likelihood	-2,331.121	-1,790.16	

* Significant at 10%; **significant at 5%; *** significant at 1%. Standard errors are in brackets.

factors have the same impact in both stages as in a one-tiered Tobit model is therefore a restrictive approach and leads to biased conclusion, which confirms our Hypothesis 2. Our result also confirms the significance of the the lagged dependent variable in the two-tiered panel model compared to the one-tiered panel model, meaning that the dynamic component is crucial in the SWF's investment decision process and should be taken into account in the two-tiered model.

2.5.2.2. Results of the two-tiered dynamic Tobit panel model

Results of the two-tiered dynamic Tobit model with panel data are given in Table 2.6. Panel A displays the results of the first stage (investment decision) and Panel B the results of the second stage (the decision about the amount to invest). The same explanatory variables have been included in each step of the two-tiered model. For both equations, we include in the first column all the possible explanatory variables, corresponding to the full model. We then report the estimates of different restricted versions of this model with variables estimated one by one (columns (2) to (6)). Columns (7) gives the results of the parsimonious model.

2.5. Empirical part

Table 2.6. – **Two-Tiered Dynamic Tobit Panel Results**

This table reports results for the panel analysis of investment decision (Panel A : first equation of the two-tiered tobit model) and the average amount invested by SWFs (Panel B : second equation of the two-tiered tobit. Column (1) gives the results of the full model, columns (2) to (6) report the estimates of different restricted versions of this model with variables estimated one by one. Columns (7) gives the results of the parsimonious model. The summary statistics of these variables are presented in Table 4. Appendix 3 presents details on variables construction.

Panel A : decision to invest (first equation)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
CONSTANT	-5.668*** [0.455]	-5.335*** [0.3772]	-5.401*** [0.355]	-5.807*** [0.334]	-5.892*** [0.408]	-5.862*** [0.433]	-5.797*** [0.459]
INFLATION	0.002** [0.008]	0.024** [0,008]					0.025* [0.112]
REER	0.003 [0.002]		0.002 [0.002]				0.002 [0.003]
POLITY	-0.837*** [0.247]			-1.136*** [0.174]			-0.816** [0.257]
KAOPEN	0.304 [0.188]				-0.040 [0.181]		0.245 [0.157]
GOV STAB	0.141*** [0.035]					0.208*** [0.033]	0.128*** [0.037]
POLITICIANS	0.337* [0.144]						0.232 [0.138]
DIST	-0.000 [0.000]						
GDP	-0.000 [0.007]						
CORRUPTION	0.007 [0.054]						
RELIGION	-0.215 [0.200]						
LARGE	0.049 [0.104]						
COMMODITY	-0.182 [0.119]						
λ_1	0.111*** [0.015]	0.132*** [0.016]	0.137*** [0.015]	0.133*** [0.015]	0.394*** [0.062]	0.382*** [0.049]	0.114*** [0.021]
λ_2	0.381 [0.242]	0.480* [0,235]	0.545* [0.233]	0.524* [0.233]	0.420 [0.284]	0.193 [0.212]	0.440 [0.332]

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Panel B : Amounts to be invested (second equation)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
CONSTANT	14.749*** [0.711]	14.44*** [0.529]	14.327*** [0.521]	13.514*** [0.483]	-0.200 [0.288]	-0.598 [0.568]	14.260*** [0.684]
INFLATION	-0.001 [0.024]	0.046* [0.021]					0.011 [0.019]
REER	0.017** [0.006]		0.018** [0.061]				0.015* [0.007]
POLITY	-1.631*** [0.471]			-2.022*** [0.293]			-1.566*** [0.397]
KAOPEN	-0.984** [0.340]				-1.582*** [0.320]		-1.081*** [0.319]
GOV STAB	0.052 [0.074]					0.180** [0.055]	0.041 [0.068]
POLITICIANS	-0.077 [0.271]						0.0212 [0.260]
DIST	-0.000 [0.000]						
GDP	-0.009 [0.021]						
CORRUPTION	-0.006 [0.107]						
RELIGION	-0.151 [0.369]						
LARGE	-0.209 [0.199]						
COMMODITY	-0.148 [0.224]						
λ_1	0.084** [0.026]	0.114*** [0.025]	0.118 [0.024]	0.110*** [0.024]	0.454*** [0.053]	0.490*** [0.076]	0.084* [0.038]
λ_2	1.448** [0.496]	2.014*** [0.455]	2.051*** [0.446]	1.912*** [0.441]	1.983*** [0.313]	2.238*** [0.414]	1.446* [0.639]
σ_u	1.503*** [0.056]	1.584*** [0.064]	1.568*** [0.056]	1.548*** [0.068]	1.511*** [0.052]	1.565*** [0.067]	1.486*** [0.052]
σ_d	1.598*** [0.161]	-1.632*** [0.173]	-1.624*** [0.169]	1.619*** [0.100]	2.138*** [0.127]	1.967*** [0.219]	1.578*** [0.161]
ζ	8.408*** [0.054]	-183.800*** [0.056]	305.148*** [0.053]	312.673*** [0.056]	318.018*** [0.041]	134.533*** [0.046]	10.481*** [0.050]
Log-Likelihood	-1,790.16	-2,040.09	-2,042.39	-2,012.29	-1,990.08	-1,975.75	-1,911.33
Iterations	697	472	522	476	388	406	532

* Significant at 10% ; ** significant at 5% ; *** significant at 1%. Standard errors are in brackets.

First, we find that most of country-pair variables are significant both in Panel A and in Panel B, which means that country factors (macroeconomic, geographical, institutional and cultural factors) turn out to be key determinants of SWFs investments. This result is also in line with the conclusions of some recent studies according to which SWFs mo-

tivations may be non-financial (Chhaochharia & Laeven (2009), Bernstein et al. (2013) or Knill et al. (2012b)). The importance of country factors constitutes also a key point in order to evaluate the role of SWFs investments in crisis periods. If they were exclusively driven by the quest of financial returns they could be a destabilizing force for financial markets. On the contrary we show that macroeconomic determinants are crucial for SWFs. Such a finding tends to support the idea that SWFs investments follow long run horizon strategies, constituting hence potential market stabilizers in turmoil period.

Second, our estimations indicate that : i) country-level factors have a positive impact not only on the investment decision, but also on the amount decision to be invested which is conditional on the investment decision. This is clearly the case for the variable *POLICY* which is significant in both equations ; ii) these country factors driven the SWF investment decision are not the same as the ones used to fix the amount to be invested, which is consistent with Hypothesis 2. More precisely, we find that the financial openness index *KAOPEN* does not matter for the decision to invest whereas a high difference in the financial openness index between the SWF and target country tends to decrease the average value of the deal. On the contrary, higher government stability difference (*GOVSTAB*) increases the probability of a SWF investment but does not affect the amount to be invested. In support of this result, Knill et al. (2012b)) find that bilateral political relations between SWF and target countries are an important determinant of why SWFs invest in a given country but they matter less in determining how much to invest. On the basis of our results, we can conclude that the complex decision-making process of SWFs that lead to investment location choice implies to disentangle the determinants driven the SWF investment decision of those used to fix the amount to be invested.

Regarding hypothesis 1 which stresses that SWFs tend to invest in countries which share the same macroeconomic, geographical and institutional characteristics, we find

some contrasted results concerning macroeconomic and cultural factors. While the variable *GDP* is never significant, we observe that the coefficient for *REER* is significantly positive in Panel B but not in Panel A whereas it is the reverse for the variable *INFLATION*. This suggests that the greater is the difference in terms of *REER*, the more a SWF tends to invest large amounts. On the contrary, the greater the difference in terms of inflation, the more likely a SWF is to invest. These results can be interpreted as the fact that SWFs may prefer to invest in countries that do not share the same macroeconomic characteristics as theirs. As seen in previous section, the majority of the most active SWFs are located in Asia and in the Middle East and show a clear preference to invest in developed countries (North America and West Europe) that have a more stable economy both in terms of inflation and exchange rates.

Concerning cultural factors, unlike Chhaochharia & Laeven (2009) and Bernstein et al. (2013), we do not find some empirical supports that SWFs are focused on countries which share the cultural characteristics as theirs or are geographically close to theirs (the variables *RELIGION* and *DIST* are not significant both in Panel A and in Panel B). This result does not corroborate the idea that SWFs invest having in mind religious or cultural proselytism (Islamic finance). In a same way, we do not find some evidence of a home or a region bias in the SWF investment policy.

However, hypothesis 1 is well supported by our results concerning political and institutional factors. The significance of *POLITY*, *GOV STAB*, *KAOPEN* and *POLITICIANS* clearly reveal that country factors are essential in the SWFs investment decision process. More specifically, we find that *POLITY* and *KAOPEN* are negatively related to SWFs investments (decision and/or the amount to be invested), meaning that SWFs are more likely to invest in countries with which they have lesser differences in the democracy level as well as in the financial openness. The first result, which is consistent with Karolyi and Liao (2017), means that SWFs prefer to invest in countries with which they have simi-

lar levels of democracy.^q Moreover, the variable *GOV STAB* is positively related to SWFs investment decision but does not have an impact on the amounts to be invested, which means that a SWF is more likely to invest in a country when the government stability is different. Contrary to Bernstein et al. (2013), we find that the presence of politicians in the fund significantly influences the decision to invest abroad.^r At last, the characteristics of the fund itself like its size or its origin (commodity fund or not) do not seem to influence its investment strategy.

Hypothesis 3 deals with the autoregressive terms and assumes that when a SWF is investing in a country it is likely that it will invest again in the future. In other words, the autoregressive coefficients (λ 's) will be significantly different from 0. It appears that indeed in Panel A only λ_1 is significant. It indicates that a SWF tends thus to reinvest in a country where it has already invested. We also observe that λ_2 is not significantly different from 0, which indicates that there is no investment barrier for countries where SWFs have never invested in. For Panel B, both λ_1 and λ_2 are significant, supporting the idea of an inertia in the amount invested by SWFs.

2.5.3. Some refinement on country-pair variables

Results found in Tables 2.5 allow to know if country-pairs variables are significant but not to deduct what is the sense of the difference : does the probability of investment done by the SWF country (decision and/or the amount to be invested) tend to increase or decrease when the difference between SWF country factors and those of target country is negative (positive) ? For that, country-pair variables described in Equation (5) were split in order to determine if there is a difference in favor of the acquirer or of the host

q. Knill et al. (2012b)) find however that *POLITY* is positively related to SWF investment (decision and the amount to be invested).

r. Note however that we don't take into account the SWF decision of investment at home unlike Bernstein et al. (2013).

country :

$$x_{ij,t,+} = x_{j,t} - x_{i,t} \quad \text{with } x_j > x_i \quad (2.10)$$

$$x_{ij,t,-} = x_{j,t} - x_{i,t} \quad \text{with } x_j < x_i \quad (2.11)$$

The results are displayed in Tables 2.7. Panel A displays the results of the first stage (investment decision) and Panel B the results of the second stage (the decision about the amount to invest). These new results confirm the role of political and institutional variables in the attraction of SWFs : stability of the government, democracy index and degree of capital account openness. In particular, we find that political stability of the target country is expected a factor that contributes to the attractiveness when acquirer country is less stable politically (*GOV STAB+* is positive and highly significant in Panel A).

Once again, we find that the determinants driven the SWF investment decision are not the same as the ones used to fix the amount to be invested. More precisely, *POLITY-* and *KAOPEN+* are negative and significant in panel B, which means that SWFs are more prone to investing for large amounts in countries that are less democratic and more financially opened. Strikingly, *KAOPEN-* is significantly positive in panel A whereas *KAOPEN+* is significantly negative in panel B. This result means that the degree of financial openness of the target country matters for both the SWFs investment decision and the amount to be invested.

Table 2.7. – **Two-tiered dynamic Tobit panel results - Robustness checks**

This table reports results for the panel analysis of the decision to invest and the average amount invested by SWFs taking into account the sign of the difference. The explanatory variables (x) have been calculated with the following formula : $x_{ij} = x_j - x_i$ where i is the target country and j is the acquirer country. We then decided to reestimate the model taking into account both the cases in which $x_j > x_i$ (x_{ij+}) and $x_j < x_i$ (x_{ij-}). Column (1) gives the results for Panel A (decision to invest) and column (2) gives the results for Panel B (amounts to be invested).

	Panel A	Panel B
CONSTANT	-4.757*** [0.421]	14.440*** [0.529]
INFLATION+	0.026 [0.019]	-0.025 [0.035]
INFLATION-	0.050** [0.018]	0.019 [0.038]
REER+	0.012 [0.008]	0.033 [0.023]
REER-	-0.005 [0.004]	-0.002 [0.009]
POLITY+	-0.758 [0.600]	-1.503 [1.160]
POLITY-	-0.344 [0.375]	-1.361** [0.473]
KAOPEN+	-0.026 [0.339]	-1.637*** [0.453]
KAOPEN-	1.091*** [0.307]	0.116 [0.509]
GOV STAB+	0.177*** [0.039]	0.080 [0.074]
GOV STAB-	0.052 [0.097]	-0.337 [0.201]
λ_1	0.084** [0.074]	0.081** [0.025]
λ_2	0.208*** [0.235]	1.433** [0.447]
σ_u		1.470*** [0.049]
σ_d		1.498*** [0.127]
ζ		56.844*** [0.056]
Log-Likelihood		-1833.78
Iterations		538

* Significant at 10%; ** significant at 5%; *** significant at 1%. Standard errors are in brackets.

2.6. Conclusion

One of the great fears surrounding SWFs cross-border investments and well documented in the academic literature is that these will be made not for financial motives but for other motives. This paper aims to shed light on the question of the motivation of SWFs in their investment decision and more precisely whether country-level factors like macroeconomic, political, institutional or cultural factors can explain this decision. More specifically, we develop an approach that takes into account the fact that the cross-border investment decision for a SWF is the outcome of a complex decision making process. To do so, we estimate a two-tiered dynamic Tobit panel model recently developed by Chang (2011b) and extended by Xun & Lubrano (2015), which allows to test three important aspects in this decision making process : i) the independence of the SWF decision of where and how much to invest (which justifies the choice of the two-tiered model) ; ii) the persistence phenomenon in the investment decision which is accounted in the dynamic dimension of the model ; iii) the inclusion of the temporal dimension as well as the unobserved heterogeneity in the dependent variable taken into account in the panel dimension of the model.

Several insights emerge from our analysis. From an econometric perspective, the key insight from this paper is that the choice of the model allows to estimate independently the decision of where and how much to invest. The results of the analysis indicate that the determinants driven the SWF investment decision are not the same as the ones used to fix the amount to be invested. This suggests that ignoring the two-stages nature of the investment decision and assuming that the country factors have the same impact in both stages as in a Tobit model is therefore a restrictive approach. On the basis of our results, we can conclude that country-level factors are key determinants not only of the investment decision but also of the amount decision to be invested. In the same spirit, we find that the dynamic component in the two-tiered panel model is crucial, suggesting

that SWFs have a tendency to invest again and for the same amounts in the following years in the target country once the decision to invest has been taken.

The results of the model also suggest that country-level factors can affect the SWF investment decision which means that financial motives are not the exclusive target of their investment strategy. In particular, we find that SWF investments are driven by macroeconomic, political and institutional considerations. The findings regarding macroeconomic variables show that more mature economies tend to attract SWF investments. Our findings additionally show that SWFs where politicians are involved have a much greater likelihood of investing abroad and they tend to be attracted by countries with higher political stability. At last, we find that SWFs are more prone to investing for large amounts in countries that are less democratic and more financially opened, which means that the determinants driving the investment decision are not the same as the ones used to fix the amount to be invested. Taken as a whole, our results lend support to the idea that SWFs are safe in the choice of target countries concerning their investment decisions but behave as more opportunistic investors concerning the amount to be invested. Our results shed new light on SWFs investment strategy for regulators seeking to enhance financial stability, motivating, in line with the Santiago principles, a better evaluation of macroeconomic risks.

Determinants of Cross-border Majority Acquisitions of GCC SWFs

This essay is written with J-F. Carpentier and C. Lecourt

Abstract :

In this paper we examine the investment strategy of sovereign wealth funds (SWFs) of the Gulf Cooperation Council (GCC) countries. GCC SWFs are considered as relatively opaque investors and strongly politicized, raising some concerns for perceived political and security risks. We investigate what are the drivers of majority cross-border equity acquisitions made by GCC SWFs over the period 2006-2015. Using a logit model and an ordered logit, we test if usual determinants of SWFs investments still stand when we look at influential (> 10%) or majority (> 50%) acquisitions made by GCC SWFs. We find that GCC SWFs' do not consider financial characteristics of the targeted firms when they acquire large cross-border stakes but rather the characteristics of the country (countries in the European union and/or countries with a high level of shareholders protection), suggesting that their motives may go beyond pure profit maximization. We also find that transparent funds are more likely to take influential or majority stakes and that they do so predominantly in non-strategic sectors. Overall, our results indicates that even if GCC SWFs don't seek only for financial returns, acquiring majority stakes is not a lever for GCC governments to get strategic interests in the targeted country.

Keywords : Sovereign Wealth Funds ; Cross-border Majority Acquisitions ; Ordered logit model ; GCC countries

JEL classification : F310, F31, G15

3.1. Introduction

Defined by the IMF (2008) as *"government-owned investment funds set up for a variety a macroeconomic purposes"* such as stabilisation, saving for future generations and investments in socio-economic projects, sovereign wealth funds (SWFs) have sharply grown over the last decade, with resources estimated to be USD 7.3 trillion in June 2017, thanks to high oil prices, financial globalisation and sustained global large imbalances.^a SWFs have recently attracted considerable public attention. While the size and rapid growth of SWFs suggest that they have become major players in the world, buying large stakes in companies and giving government's exposure to sectors they may otherwise be unable to achieve, their objectives and behavior are not well understood. In particular, the opaqueness surrounding their structure and activities is a major concern in host countries, as it is unclear whether SWFs behave like governments or institutional investors : *"the prospect of significant investments by SWFs potentially giving foreign countries control over important parts of an investee country's economy has emerged as a political issue"* (Greene and Yeager, 2008).

This is particularly the case of SWFs originating from the Gulf Cooperation Council (GCC) countries^b, by which the amount accumulated has dramatically increased since 10 years due to the increasing prices of commodities such as oil and natural gas. SWFs of GCC countries manage around 40% of SWFs global assets. The SWFs of these countries are broadening their investment portfolios and focusing on achieving higher returns. Consequently, they have invested all over the world during the last decade with the bulk of them focused on Developed countries and in particular Europe. It has become common news to hear that one of these GCC funds is in the process of buying, planning to buy or investing in a major institution in western countries.

a. According to the Sovereign wealth Fund Institute, the assets managed by these funds were estimated to be USD 3,2 trillion in September 2007, which means that the size of these funds has more than doubled since the beginning of the financial crisis (source : www.swfinstitute.org).

b. GCC member states are Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates. The United Arab Emirates is a federation of seven emirates, including Abu Dhabi, Dubai and Ras al-Khaimah, which all have their own SWF.

A revealing example is the full acquisition by Qatar Investment Authority (QIA) in 2011 of the popular football club Paris St. Germain. The same SWF has played the part of deal-maker with the Glencore acquisition of Xstrata in 2013 and with Glencore again by buying stakes in Russian oil company Rosneft in December 2016. In June 2016, the Public Investment Fund (PIF) of Saudi Arabia has announced to have taken a USD 3.5 billion stake in the taxi company Uber, in order to diversify the economy of the country by investing in sectors less dependent on oil. These examples illustrate well the fact that the motives of GCC funds can be other than pure profit maximisation of the financial investment and reveal their capacity to take the control or to be able to influence companies involving the strategic national interests.

While there is an extensive literature that investigates the determinants of SWFs investment decisions (see Amar et al. (2015); Ciarlone & Miceli (2014); Knill et al. (2012b); Kotter & Lel (2011); Megginson et al. (2013) among others) only few papers address the question of the determinants of cross-border majority purchases. Karolyi and Liao (2017) analyze cross-border majority acquisitions of government-led acquirers, Heaney et al. (2011) analyse the determinants of Temasek Holding's level of investment and Murtinu and Scalera (2013) show that SWFs are more likely to use investment vehicles when they take cross-border majority stakes. This is, however, a key question as it is clear that SWF activism, i.e. the acquisition of large or majority acquisitions, attracts more hostility and generates more severe political opposition by host-country governments (Murtinu and Scalera (2013)) as was for example illustrated in 2006 by the failed attempt by Dubai World Ports to acquire P&O. Cross-border majority purchases also bring regulators to require a higher level of transparency as evidenced recently by the EC Regulation dated 11 July 2017 that forces SWFs to provide more information when buying a significant control position in European companies. This question matters in the ongoing opportunity-threat debate, as it indicates what role SWFs want to take in their targets, and whether it differs across sectors, firms or countries.

The aim of this paper is to fill this gap in the literature by identifying the drivers of

majority acquisitions of SWFs originating from the GCC member states. Though SWFs are generally seen as heterogeneous investors with respect to their source and size of assets, organizational structure, governance, risk factor and their objectives, GCC SWFs present some key characteristics that make them a distinct group among SWFs. First, they are funded by commodity revenues (mostly oil) meaning that their proceeds are extremely dependent on oil prices. Second, they are considered as relatively opaque investors and strongly politicized. Third, they come from autocratic countries. Finally, they are located in a same region, with common language and religion.

In particular, we study what determines the GCC SWFs' decisions to take control or large stakes in foreign firms. More specifically, we shed light on the real intention of SWFs when they decide to acquire a majority stake : Do GCC SWFs take cross-border majority stakes based on the financial health of the targets ? Based on the sectors, potentially strategic ones ? Based on country specific characteristics (political or macroeconomic ones) ? Using an original large-scale database including both data on announced cross-border stakes done by GCC SWFs between 2006 and 2015, macroeconomic data on target countries as well as financial data on listed target firms, we use an ordered logit approach to explain the motivation of GCC SWFs to take cross-border large ($> 10\%$) or majority ($> 50\%$) acquisitions.

Our paper has several key findings. We first find that financial characteristics of the target have no role in the control decision. Taking a majority stake is a specific decision going beyond investment decision, where data tell that financial dimension play only a minor role, if any. Then, we find that transparent GCC SWFs are more likely to acquire large stakes and that they do so predominantly in : i) countries of the European Union ; ii) countries with a high level of shareholders protection ; iii) and in non-strategic sectors. These results altogether suggest that even if the motivations behind GCC SWFs majority acquisitions are other than pure profit maximisation, taking large stakes is not a mean for governments to acquire strategic interests abroad.

The paper is organized as follows. The next section introduces the hypotheses for ana-

lyzing GCC SWFs cross-border investment decisions abroad. Section 3.3 provides some details regarding the data. Section 3.4 presents the methodology and reports our empirical findings. Section 3.5 concludes.

3.2. Review of literature and hypotheses

There is an extensive literature that investigates to what extent SWFs investment decisions differ from those of other institutional investors. Bernstein et al. (2013) explain that the presence of politicians inside the board of SWFs could lead to the search of strategic objectives and finally to financial and political destabilization. Dyck & Morse (2011) show that a part of SWFs portfolio is oriented toward the development of their domestic countries, indicating that investment decisions of SWFs are distorted by political considerations. Chhaochharia & Laeven (2009) find that SWFs show strong biases compared to other investors. More specifically, they find that SWFs are more likely to invest in countries that share a common culture and that they display industry biases, investing predominantly in oil company stocks. Knill et al. (2012b) find that SWFs are more likely to invest in countries with which they have weaker political relations, implying that SWFs may invest, at least partly, for non-financial motives.

The findings that SWF investment decisions are dissimilar to those of traditional institutional investors can be explained by several factors. First, SWFs are sovereign-owned institution, which may be managed either by the ministry of finance or by a board composed of government officials. Unlike other funds, the politics or the structure of the fund owned/controlled directly by the government may influence asset allocation decisions. Second, in terms of social welfare, governments have broader goals than wealth maximisation of the firm, such as the development of the national economy or the maximisation of the employment level. Third, according to the natural resources curse theory (see among others Sachs & Warner (1995, 2001), Sala-i-Martin & Subramanian (2003) or Smith (2004)), countries with weak institutions generally have natural resource wealth

that leads to resource dependency and rentierism. Even if the declared objective of these SWFs is to ensure that the proceeds from natural resources rents will be channeled through a transparent, accountable and professionally managed fund, they may be a mean for these autocratic countries to embezzle natural resources revenues in order to invest abroad (Carpantier & Vermeulen (2014)).

While there is an extensive literature that investigates the determinants of SWFs investment decisions, only few papers address the question of the determinants of cross-border majority purchases. Karolyi and Liao (2017) analyze cross-border majority acquisitions of government-led acquirers but don't focus on SWFs. Heaney et al. (2011) analyse the determinants of the level of SWFs investment, but their analysis focus on the Singaporean fund, Temasek Holdings. And Murtinu and Scalera (2013) show that taking cross-border majority stakes is one driver of the use of investment vehicles by SWFs.

Large or majority acquisitions raise very specific questions for the following reasons. First, a large acquisition, or a majority acquisition, potentially signals an activist stance and willingness to engage in effective corporate governance activities. Second, it can be part of a general commercial or industrial development strategy of the home country of the SWF. It allows the development of joint ventures and eases the strengthening of expertises or industrial complementarities relevant from the home country perspective (typically the downstream integration of energy value-chain). Third it signals that the investment might go beyond passive portfolio management and mean-variance optimization framework, which is quite obvious knowing that SWFs are government-owned entities.

Given these features, we now specifically analyse the determinants of SWF majority acquisitions through 4 key hypotheses.

H1 - GCC SWFs take cross-border majority stakes without considering the financial characteristics of the target.

As documented by Bernstein et al. (2013), the presence of politicians inside the board of the SWFs (which is the case for all GCC SWFs) leads to the search of strategic objectives not necessarily related to financial characteristics. An abundant literature (Chhaochharia & Laeven (2009), Ciarlone & Miceli (2014), Dyck & Morse (2011), Johan et al. (2013), Knill et al. (2012b) among others) has shown that politically related factors drive SWFs investment decisions.

At the same time, part of the literature shows that SWFs investment decisions are also financial (Fernandes (2011), Kotter & Lel (2011), Megginson et al. (2013)). Fernandes (2011) shows that SWFs tend to act as prudent investors, taking stakes in large firms with proven profitability. Furthermore, his results indicate that SWFs investments are not a mean of gathering corporate intelligence. Finally, given their long term investment horizon, SWFs are found to show no preference for liquid stocks. Kotter & Lel (2011) find that SWFs tend to invest in large firms located in financially developed countries, exhibiting financial difficulties. They then deduce that SWFs are similar to institutional investors in their preference for target characteristics. Megginson et al. (2013) analyze the determinants of SWFs investment from the country perspective. They test if SWFs are purely commercial investors facilitating cross-border corporate investments or if their investment strategies are biased by political objectives. Their results suggest that SWFs make investment decisions principally for commercial purposes.

To the extent that control decisions potentially go beyond pure portfolio risk-return management, we expect the financial factors to have a low weight, if any, in the decision process. In other words, we test whether GCC SWFs take cross-border (full or partial) acquisitions based on financial variables, meaning that the decision of cross-border acquisition is, or not, oriented towards risk-return and profit maximisation objectives.

H2 - GCC SWFs take the degree of financial and economic development of the target country into account before taking large or majority stakes.

Several papers study the impact of target country economic, financial and institutional development on the SWFs investment strategies. Some authors (Megginson et al. (2013) and Amar et al. (2015) among others) find that the economic development do not explain SWFs investment decisions. On the contrary, Knill et al. (2012b) find that SWFs are more likely to invest, and for larger amounts, in countries that have a level of economic development close to their. Ciarlone & Miceli (2014) find that SWFs tend to invest in countries that have a higher degree of economic development which is consistent with Karolyi and Liao (2017) who show that government-controlled investments flow from emerging to developed economies. Furthermore, the financial openness of the target country is one of the drivers of SWFs investments. Amar et al. (2015) and Ciarlone & Miceli (2014) show indeed that SWFs are more likely to invest in countries that are financially opened. Finally, some authors find that the level of investors protection significantly explain SWFs investment decisions. Knill et al. (2012b) show that SWFs are more likely to invest in a country with a high level of investors protection, but when they do so, they tend to invest smaller amounts, which is consistent with Ciarlone & Miceli (2014) but not with Megginson et al. (2013) who find that a higher level of investors protection leads to higher amounts.

If the literature tells us that economic development, financial openness and the level of investors protection matter in SWFs investment decisions, the way these factors impact the decision is not unanimously accepted. These different results in the literature may be explained by the heterogeneity of this group of investors. As we use here a homogenous group of SWFs (i.e. the GCC SWFs), we would like to test whether GCC SWFs take cross-border majority acquisitions by considering the economic and financial development of the target country, respectively measured by the GDP per capita, the real effective exchange rate, two financial openness indexes (Chinn-Ito index and FDI

restrictiveness index) and by a proxy for minority shareholders protection (the anti-self dealing index).

H3 - GCC SWFs are more likely to take majority equity stakes in countries where there are bilateral trade agreements.

Majority acquisitions are expected to be part of a broader partnership between countries. We consider the impact of bilateral trade, financial or political agreements between SWF's and host countries on the acquisition decision. In line with Hoeckman and Kosztecki (2009) and Murtinu and Scalera (2013), we refer to bilateral trade agreements as reflection of political relations and decisions among countries. As explained by Murtinu and Scalera (2013), international trade agreements first allow the government to signal a credible lasting commitment to liberal economic policies, limited intervention in the domestic economy and peaceful relations. Second, trade agreements are useful to reinforce political power.^c GCC countries have free trade agreements with some countries such as Singapore (GSFTA), or some European countries (The EFTA is a free trade agreement between GCC countries and Iceland, Lichtenstein, Norway and Switzerland). The existence of bilateral trade agreements between SWF's and target countries should facilitate the entrance of SWFs in foreign countries by reducing the risk perception related to SWFs investments and therefore by mitigating the potential fear against their acquisitions.

Some papers find that SWFs tend to invest in countries that are identified as trade partners (Megginson et al. (2013), Knill et al. (2012b)). In the same way, Murtinu and Scalera (2013) find that bilateral trade agreements reduce the use of corporate investment vehicles for SWFs wishing to take cross-border majority acquisitions.

Related to this literature, we expect GCC SWFs to be more likely to take majority acquisitions overseas in countries where there are bilateral trade agreements.

c. An example is the trade agreement between the US and 11 Asia-Pacific countries (the Trans-Pacific Partnership), where the exclusion of China by the US reveals the political nature of this agreement.

H4 - GCC SWFs target cross-border companies operating in strategic industries.

The hostility of the host countries' public opinion and governments towards SWFs can be explained by the fact that SWFs might seek stakes in strategic sectors as defense, finance, telecommunication, energy or transportation (Dyck & Morse (2011)). This is the reason why many governments want to hinder foreign SWFs investments when the target is a strategic infrastructure or a sensitive firm operating in a strategic sector (Karolyi and Liao (2010), Knill et al. (2012b)). Fernandes (2011) gives some examples of regulatory/enforcements efforts in order to hinder SWF investments : *"The German government has announced that it would introduce controls on investments by SWFs, especially if they seek stakes in strategic sectors. French President Nicolas Sarkozy has announced that he would use his country's state-owned bank (Caisse des Dépôts et Consignations) to help protect French companies against potentiel takeover threats posed by SWFs"*.

As explained by Murtinu and Scalera (2013), the risk of political and financial destabilization for the host country is higher when the target investment is a strategic infrastructure. Two deal-level characteristics can explain the fear of the host country : i) the sector of the foreign target company ; ii) the degree of control on this company. The larger the SWF's control on target firms operating in strategic industries, the more hostile host countries will be.

According to the literature on SWFs (Karolyi and Liao (2010), Bernstein et al. (2013), Murtinu and Scalera (2013)), three factors contribute to increase the probability of cross-border majority acquisitions in strategic industries : i) the undemocratic and authoritarian nature of the countries where SWFs originate from ; ii) the high level of foreign currency reserves ; iii) the involvement of politicians in the board of SWFs. As GCC combines the three factors, we expect that GCC SWFs target cross-border companies operating in strategic industries.

Furthermore, according to the portfolio allocation theory, SWFs may be used to diver-

sify the industrial base of their home country by targeting foreign industries in which their country is under-represented. The political motives of cross-border SWFs acquisitions in strategic industries can therefore be explained by the search of a greater industrial diversification or a better access to lower-cost resource inputs. Regarding resource-rich countries like GCC, these countries are dependent on revenues from sales of energy, which makes these economies extremely vulnerable to changes in oil prices. It is fundamental for these countries to diversify their revenues by targeting foreign industries in which the country is under-represented (Sturm et al. (2004)). Therefore, the search of a greater industrial diversification may be a result of reducing dependency on oil revenues but also the search of strategic industrial gains in order to control access to technologies with the aim of maximizing long-term returns (Seznec (2008)). We then complement the sectoral focus by testing whether cross-border acquisitions are under-represented in energy sector.

3.3. Data and descriptive analysis

3.3.1. The SWF sample

According to the IMF (2008), *"Sovereign wealth funds are government-owned investment funds set up for a variety a macroeconomic purposes"*. Considering this definition, we conducted a comprehensive search of all existing GCC SWFs and ultimately get 15 entities. We find 7 SWFs in the United Arab Emirates, 3 SWFs in Saudi Arabia, 2 SWFs in Oman, 1 in Bahrain, 1 in Kuwait and 1 in Qatar. Names, inception dates and estimated size are reported in Table 3.1. We then conducted a search of all wholly-owned subsidiaries of these funds using the online database Thomson Reuters Eikon and the funds' websites, which are also reported in the same Table. We finally include two columns to report the value of the Linaburg-Maduell transparency index for each fund (the higher the index, the more transparent the SWF) and the announced main objective(s) of the funds.

3. Determinants of Cross-border Majority Acquisitions of GCC SWFs

Table 3.1. – **GCC SWFs characteristics**

This table describes GCC SWFs' main characteristics. Column (3) gives the date of the creation of each fund. Column (4) gives the list of each fund's wholly-owned subsidiaries, based on the authors' researches. Column (5) gives the assets under management of each fund in USD billion. Column (6) gives the Linaburg-Maduell transparency index of each fund^a. Column (7) gives the objective(s) of the funds, based on the SWFs websites.

Country	Name	Creation	Wholly-owned Subsidiaries	AUM	Transpa- rency index	Objective(s)
Bahrain	Bahrain Mumtalakat Holding	2006	Atbahrain B.S.C; Bahrain Real Estate Investment; Gulf Aviation Academy	11.1	8	Reserve investment fund
Kuwait	Kuwait Investment Authority	1953	Reserve fund for future generations; General reserve fund; Saint Martins Property Co	592	6	Reserve investment fund
Oman	Oman Investment Fund	2006		6	4	Reserve investment fund
Oman	State General Reserve Fund	1980		9	4	Saving; Reserve investment fund; Domestic economic support
Qatar	Qatar Investment Authority	2005	Qatar Airways; Qatar holding llc; Qatar Sport Investments	256	5	Reserve investment fund
Saudi Arabia	Kingdom Holding Company	1980		25	nc	Domestic economic support
Saudi Arabia	Public Investment Fund	2008	Sanabil Investment	160	4	Domestic economic support
Saudi Arabia	SAMA Foreign Holding	1952		632.3	4	Reserve investment fund
UAE	Abu Dhabi International Petroleum Investment Company	1984	CEPSA; Nova Chemicals Corp.; Aabar investment	66.3	9	Reserve investment fund
UAE	Abu Dhabi Investment Authority	1976	Harina Company Limited; Luxinva SA; Tawreed Investments	773	5	Reserve investment fund
UAE	Abu Dhabi Investment Council	2007	Al Hilal Bank P.JSC	110	nc	Reserve investment fund
UAE	Abu Dhabi Mubadale Development Company	2002	Mubadala Capital and Real Estate; Mubadala Capital LLC; Mubadala Commercial Finance; Mubadala Petroleum; Mubadala technology	66.3	10	Domestic Economic Support
UAE	Emirates Investment Authority	2007	Dubai Holding; Dubai World; Istithmar world; Dubai Ports World; Dubai world Africa service; Dubai Airport Free Zone Authority; Emirates airlines; Emirates Group; Emirates national oil co LTD; National Bonds Corporation	15	3	Reserve investment fund
UAE	Investment Corporation of Dubai	2006		183	5	Reserve investment fund
UAE	RAK Investment Authority	2005	Al-glhail power	1.2	3	Domestic economic support

^a The Linaburg-Maduell transparency index was developed at the SWF Institute by C. Linaburg and M. Maduell. It rates SWFs according to their level of transparency from 1 to 10. The higher the index is, the more transparent the fund is. For more details on the index construction, see: <http://www.swfinstitute.org/statistics-research/linaburg-maduell-transparency-index/>.

3.3.2. Investment data

We use Thomson Reuters Security Corporation's (SDC) Platinum Mergers and Acquisitions database to collect data on announced cross-border acquisitions done by GCC SWFs directly or by their wholly-owned subsidiaries. We doubled checked this list and complete the missing acquisitions by using the online database Factiva. We collect a number of data items, including information about the targeted firms (name, country), information about the SWFs (name, subsidiary, country), the date of the transaction, the pre- and post-acquisition share of the SWF in the targeted firm and the deal value, if disclosed. This search yields a sample of 163 cross-border acquisitions from GCC SWFs in 28 target countries over the period 2006-2015.^d

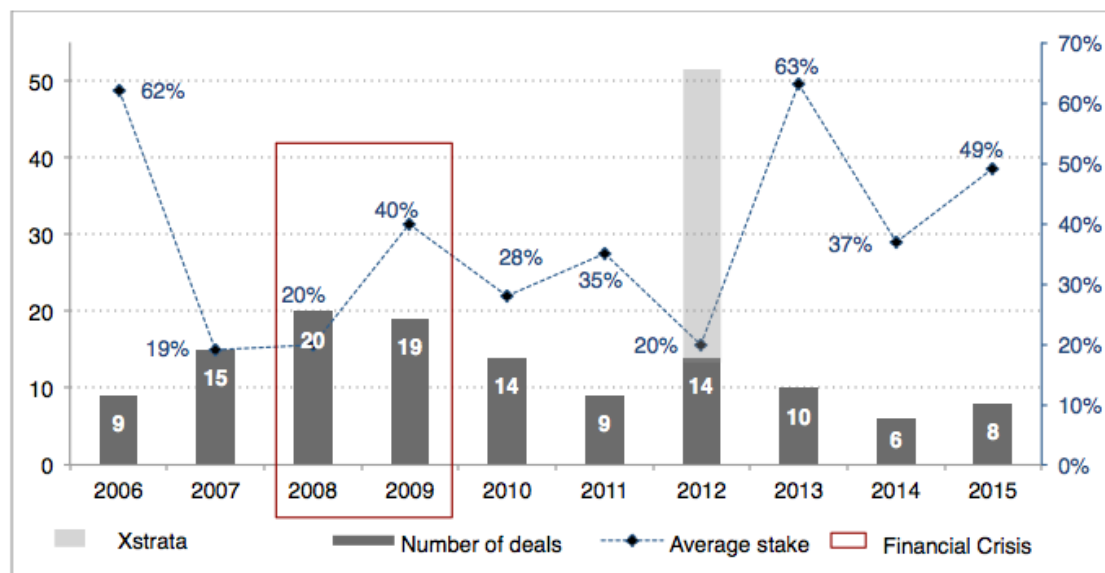
Once the investment decision is made, the SWF decides what degree of control it wants. We identify three levels of investments, with thresholds at 10% and 50%. The first threshold follows the definition of Foreign Direct Investments (FDIs) according to which "*a FDI (...) reflects the objective of a resident in one economy obtaining a lasting interest in an enterprise resident in another economy. (...) A direct investment relationship is established when the direct investor has acquired 10 percent or more of the ordinary shares or voting power of an enterprise abroad*" (Patterson et al. (2004)). The second threshold is set at the majority stake. So, the first category of deals includes transactions where the SWFs take shares of the target such that its total holdings remain inferior to 10% (minority deals). The second category collects the transactions leading to stakes equal or larger than 10%^e, but inferior to 50%, with SWFs viewed as large and influential minority shareholders. Following Karolyi and Liao (2010), we identify a third level of investment which includes transactions where the SWFs take shares such that the holdings are at least 50% of the target (control/majority deals). The variables taking the total number of minority, influential and majority deals are below labelled as

d. As most GCC SWFs were created in 2005 or later, our study focus on GCC SWFs acquisitions between 2006 and 2015.

e. 10% is also the relevant threshold used in the European legislation for defining "qualifying holdings" (Article 92 of Directive 2001/34/EC)

Figure 3.1. – **Evolution of GCC SWFs Foreign Investments**

This Figure presents the number of deals and the average post-acquisition stake of cross-border investments led by GCC SWFs over the period 2006-2015. The graph excludes investments of Qatar Investment Authority in Xstrata which consists in 39 acquisitions of less than 1% of the firm.



$DEALS - 10\%$, $DEALS + 10\%$ and $DEALS + 50\%$, while the variable $DEALS$ takes the total number of transactions.

Figure 3.1 shows the evolution of GCC SWFs foreign investments over the period 2006-2015. This figure reveals that GCC SWFs have a tendency to acquire large stakes as the average post-acquisition share is larger than 19% every years. During the financial crisis (2008-2009), SWFs made more investments but acquired smaller stakes. This is linked with the large number of investments made in financial institutions such as Qatar Investment Authority investing in Barclays Bank or Abu Dhabi Investment Authority investing in Citigroup. After the crisis, the number of acquisitions decreased but the average stake increased. In 2013, 2014 and 2015, the average post-acquisition share was higher than 30%.

Table 3.2 gives the geographic distribution of GCC SWFs cross-border acquisitions and cross-border majority acquisitions. Europe gathers the largest number of transactions

3.3. Data and descriptive analysis

Table 3.2. – **Geographic repartition of GCC SWF cross-border investments**

This table presents the number of deals and majority deals by target region of cross-border investments led by GCC SWFs over the period 2006-2015. *DEALS* represents the total number of deals involving GCC SWFs. *DEALS – 10%* represents the number of deals in which the post-acquisition stakes owned by the SWFs is lower than 10%. *DEALS + 10%* represents the number of deals in which the post-acquisition stakes owned by the SWFs is higher or equal to 10% and lower than 50%. *DEALS + 50%* represents the number of deals in which the post-acquisition stakes owned by the SWFs is higher or equal to 50%.

Region target	DEALS	MINORITY DEALS-10%	DEALS+10%	DEALS+50%
Africa	3 100%	3 100%	0 0%	0 0%
Central Asia	6 100%	3 50%	1 17%	2 33%
East and Southeast Asia	13 100%	3 23%	8 62%	2 15%
North America	16 100%	10 63%	3 19%	3 19%
Oceanic Bassin	8 100%	4 50%	2 25%	2 25%
South America	1 100%	0 0%	1 100%	0 0%
Europe	77 100%	27 35%	25 32%	25 32%
Total	124 100%	50 40%	40 32%	34 27%

with 77 DEALS among 124^f around the world over the period 2006-2015. These transactions in Europe are mainly majority transactions as 32% are DEALS+10% and 32% are DEALS+50%. North America and East and Southeast Asia are also places where GCC SWFs invest with respectively 16 and 13 transactions over the period. In North America, these transactions are mainly minority investments (63% of DEALS-10%) whereas in East and Southeast Asia, GCC SWFs tend to take larger stakes with 62% of DEALS+10% and 15% of DEALS+50%. GCC SWFs don't invest much in Central Asia and the Oceanic Bassin with only 6 and 8 transactions between 2006 and 2015, equally distributed between minority and majority acquisitions. It is noticeable that among all regions, Africa and South America don't attract GCC SWFs as there are only 4 transactions in these regions over the period 2006-2015.

f. We exclude the 39 acquisitions of less than 1% of the capital of Xstrata made by the Qatari SWF in our analysis. The sample consist then in 124 acquisitions in 28 targeted countries.

3.3.3. Explanatory variables

What are the factors driving GCC SWFs decision to acquire large stakes ? We employ a set of macro and firm/country/SWF-specific variables, all directly related to our four hypotheses and inspired from the set of usual controls used in the literature on SWFs investments. Details on variables construction and source are presented in Table C.1.

Target firm/sector-level variables :

In order to test whether target firm-level variables are determinants of minority/majority acquisitions for GCC SWFs (Hypothesis 1), the variables collected for each of the targeted firms included in the sample can be allocated to the broad classifications, performance, risk and liquidity. Returns on assets (*ROA*) is used in order to capture target firm performance, *LIQUIDITY* is the liquidity ratio of the target firm, *DEBT* is the long term debt level of the firm and *DEBT/ASSETS* is the ratio of long term debt on assets. These four financial variables are based on the three years preceding the investment in order to take into account the information available at the time of the investment.

In addition to variables that are related to the financial performance of the firm, we also use the target firms' sectors as explanatory variables (*LUXURY*, *FINANCE*, *ENERGY*, *INDUSTRY* and *METAL*). Even if we are conscious that most of the major funds are not so transparent and thus it is hard to measure such stakes, we would like to test whether GCC SWFs have an incentive to target cross-border companies operating in strategic industries as explained in Hypothesis 4.

Country-level variables :

In order to test whether the economic development of the target country matters in the GCC SWFs-led acquisition activity (see Hypothesis 2), we include several country-level variables that have been shown in the literature to be related to international investment choices of SWFs (Fernandes (2011)). We use the anti-self-dealing index of the target country (*ANTISELF*) constructed by Djankov et al.

(2008) measuring the level of shareholders protection. The FDI restrictiveness index of the target country (*FDI*) measures restrictions practiced by the target countries on foreign direct investment. The Chinn-Ito financial openness index of the target country (*KAOPEN*) initially introduced by Chinn and Ito (2006) measures the target country's degree of capital account openness. Like Hay & Milelli (2014), a regional dummy (*EU DUMMY*) for countries in the European Union is also included. This dummy variable equals to 1 if the target country is in the EU and 0 otherwise.

As macroeconomic performance indicators, the GDP per capita (*GDP*) of the target country and the real exchange rate of the target country (*REER*) are also included. In order to test whether GCC SWFs are more likely to take majority stakes in countries where there are bilateral trade agreements (Hypothesis 3), two proxies of bilateral trade agreement are considered : *FTA FORCE* which is a dummy variable equals to one if there is a free trade agreement in force between the SWF's country and the targeted firm's country, and 0 otherwise and *FTANEGO* which is a dummy variable equals to one if there is a free trade agreement under negotiation or in force between the SWF's country and the targeted firm's country, and 0 otherwise. At last, in order to test if there is a political dimension in GCC SWFs cross-border majority acquisitions decision, we use an index assessing the level of authority of the regime of the targeted country, the Polity IV index (*POLITY*).

SWF-level variables

Finally, we include variables measuring characteristics of each GCC SWF, including its size (*SIZE*) measured by the value of the assets under management of the fund, the variable *TRANSPARENT* which is a dummy variable equals to 1 if the Linaburg-Maduell Transparency index of the fund is higher than 5 and 0 otherwise and a dummy called *SUBSIDIARY* indicating if the transaction is made using a subsidiary of the fund.

At last, we include two control variables : the WTI oil prices (*OILPRICE*) because commodity trade resources may be the main driver of GCC SWFs strategies and a dummy variable that identifies the subprime crisis (*CRISIS*), equals to 1 if the transaction occurs in 2008 or 2009, and zero otherwise.

3.4. Empirical Part

3.4.1. Logit Analysis

3.4.1.1. The model

In order to identify the characteristics driving GCC SWFs majority purchases, we first estimate two logit models. In the first model, the dependent variable equals 1 if the fund acquires an influential stake (10% or more) and 0 otherwise. In the second model, the dependent variable equals 1 if the fund acquires a majority stake (50% or more) and 0 otherwise.

The model may be written as follows :

$$Prob(Y_{ij} = 1|X) = \Lambda(X\beta), \quad (3.1)$$

where Y_{ij} is a dummy variable equals 1 if the fund i takes at least a 10% stake (resp. a 50% stake) in a cross-border firm j . β is a $K \times 1$ vector and X the vector of explanatory variables described above (Target firm/sector-level variables, country-level variables and SWF-level variables). Lambda is the logistic function.^g

3.4.1.2. Results

Results of Logit models are reported in table 3.3. This analysis focuses on what best explains the likelihood of having an influential (10% or more) stake or a majority (50%

g. Given the limited dependent variable, we estimate a Logit model, but reported results are robust to the use of Probit regressions.

3.4. Empirical Part

Table 3.3. – **Logit Models : influential stakes and majority stakes**

This table reports results for the Logit models with robust standard errors. In model (1) and (2) (resp. (3) and (4)), the endogenous variable (Y_{ij}) is a dummy variable equals one if the fund i takes at least a 10% stake (resp. a 50% stake) in a cross-border firm j and 0 otherwise. In our general-to-specific approach, variables selection is done relying on the AIC and BIC criteria.

	INFLUENTIAL STAKE		MAJORITY STAKE	
	(1)	(2)	(3)	(4)
Constant	-31.101 [22.310]	-10.404 ** [4.823]	-46.154 [31.364]	-53.445 ** [21.209]
TRANSPARENT	1.411 [0.903]	1.192 * [0.669]	0.920 [1.016]	
SUBSIDIARY	0.157 [0.577]		-0.161 [0.663]	
EU DUMMY	2.094 ** [0.950]	1.188 ** [0.467]	1.000 [1.667]	1.582 ** [0.714]
ANTISELF	1.999 [1.466]		3.712 * [2.216]	3.836 *** [1.270]
OILPRICE	1.985 [1.301]	2.276 ** [1.095]	1.274 [1.765]	2.575 ** [1.278]
ROA	-0.010 [0.022]		-0.035 * [0.023]	-0.030 * [0.018]
DEBT/ASSETS	-1.062 [0.980]		-1.810 * [1.127]	
LIQUIDITY	-0.008 [0.066]		0.059 [0.074]	
DEBT	0.003 [0.007]		-0.000 [0.009]	
ASSETS	-0.001 [0.003]		0.002 [0.004]	
CRISIS	0.452 [0.649]		-1.956 ** [0.811]	-1.378 ** [0.601]
FTA FORCE	3.298 [2.047]		<i>omitted</i> <i>omitted</i>	
FTA NEGOT	0.203 [0.714]		-1.254 [1.282]	
FDI	5.752 [10.980]		0.215 [35.008]	
logREER	4.008 [4.512]		8.156 [5.708]	8.321 ** [4.010]
GDP	-0.000 [0.000]		0.000 [0.000]	
logKAOPEN	0.506 [1.591]		-0.943 [4.518]	
LUXURY	0.547 [0.721]		2.046 ** [0.872]	1.591 ** [0.630]
FINANCE	-2.346 ** [0.970]		-1.576 [1.055]	-1.408 * [0.848]
ENERGY	-1.443 * [0.870]	-1.200 * [0.585]	-0.813 [0.856]	
INDUSTRY	-0.708 [0.950]		-1.443 [1.825]	
METAL	-0.109 [1.357]		-0.865 [1.762]	
SIZE	-2.225 [3.504]		-7.990 [6.323]	
POLITY	0.322 * [0.175]		0.057 [0.270]	
Log-likelihood	-61.398	-68.087	-50.215	-55.138
AIC	172.797	146.173	148.431	128.276
BIC	240.759	159.766	213.023	152.498

* Significant at 10%; ** significant at 5%; *** significant at 1%.

Robust standard-errors are between brackets.

or more) stake by GCC SWFs. We present in each case the results of the full and the parsimonious model.

Concerning firm-level factors, we do not find some evidence that GCC SWFs take cross-border majority stakes considering the financial characteristics of the target, which confirms hypothesis 1. Except for the variable *ROA*, all the variables concerning the financial characteristics of the cross-border target firm are not significant. Consistent with Kotter & Lel (2011) and Bernstein et al. (2013) who find that SWFs invest in distressed firms, we find that GCC SWFs prefer to take cross-border majority acquisitions in firms with low profitability (*ROA*). This result reveals that GCC SWFs are passive shareholders with a long-run investment horizon.

Regarding hypothesis 2 which stresses that GCC SWFs take cross-border acquisitions by considering the economic and financial development of the target country, the significance of *REER*, *ANTISELF* and *EU DUMMY* clearly reveal that country factors are essential in the GCC SWFs acquisition decision process. *REER* is positively related to majority acquisitions, suggesting that these funds are more likely to take majority stakes in countries where the real effective exchange rate is high, i.e. where there is a loss of price competitiveness. In the same way, we find that GCC SWFs are more prone to take the control of a firm in countries where there is a high quality of investors protection, unlike Karolyi and Liao (2010) who find that cross-border majority acquisitions of government-led acquirers are weakly related to anti-self dealing index differences. Related to these results, the variable *EU DUMMY* is significantly positive in both models, meaning that GCC SWFs target countries of the European Union when they take influential (10% or more) or majority (50% or more) stakes. This result is consistent with Hay & Milelli (2014) who find that Europe is the privileged destination for Middle Eastern SWFs.^h

Unlike Megginson et al. (2013) and Knill et al. (2012b), we do not find some empirical support that the presence of bilateral trade or political agreement between Gulf SWF's

h. GCC SWFs have several partnerships with European companies. For example, the SWF of Abu Dhabi has partnerships with Airbus and Total from France, Siemens from Germany or Rolls-Royce from UK.

and target countries facilitate influential or majority acquisitions in target countries as expected in hypothesis 3 (the variables *FTAFORCE* and *FTANEGO* are never significant).

In order to analyse the political motivation of GCC SWFs, we have tested whether these funds seek majority stakes in strategic sectors as explained in the hypothesis 4. We find that the dummy *LUXURY* is significantly positive in the second model, meaning that GCC SWFs are more prone to take majority stakes in the luxury sector. This sector can be considered as strategic because it is representative of the national flagship. On the other hand, the variables *FINANCE* and *ENERGY* are negatively related to influential and/or majority acquisitions made by GCC SWFs. Concerning the financial sector, our result can be explained, first by regulatory/enforcements efforts made by developed countries (especially american and european countries) in order to hinder SWFs majority acquisitions in this sector, and second by the large size of firms operating in this sector (a high invested amount may however correspond to a minority stake). In the same way, we find that cross-border influential acquisition (more than 10%) of Gulf SWFs are under-represented in the energy sector, indicating that resource-rich countries, that are extremely dependent on revenues from oil, try to diversify their revenues by targeting foreign industries in which the country is under-represented.

Concerning the SWF-level variables, we find that the probability for GCC SWFs of taking an influential (10% or more) stake in a cross-border industry is positively related with the transparency of the fund. A transparent SWF reduces the likelihood of hostility and political pressure from the host country's government increasing therefore the probability of influential stake. The result is in line with Murtinu and Scalera (2013) who find that opaque SWFs are more likely to invest cross-border through an investment vehicle than transparent SWFs in order to show a passive investment approach and reduce the political pressure in the host country.

Turning to our control variables, we unsurprisingly find that oil trade resources are a driver of GCC SWFs large acquisitions. Hay & Milelli (2014) also find that the number of acquisitions has followed the same orientation than crude oil prices. Interestingly, our

results show that GCC SWFs have limited their cross-border majority acquisitions (50% or more) during the financial crisis.

3.4.2. Ordered Logit Analysis

3.4.2.1. The model

The Logit analysis described above explains the acquisition decision process of GCC SWFs by considering the decision of taking a large stake in the target firm (10% and more) or a majority stake (50% and more) as distinct decisions. This model does not allow to explain in a same model *the degree* of control these funds want : are the determinants of taking minority, large or majority stakes in a cross-border firm the same ? SWFs have three choices in their investment decision process : they decide to stay minority shareholders (less than 10%) in the foreign industry ; they take at least 10% but less than 50% in order to have a significant influence on the management of the cross-border enterprise ; or they decide to take the control of the firm (more than 50%). In order to test more than two categories of acquisition degree, the values of each category having a meaningful sequential order, the choice of an ordered-Logit model (Wooldridge (2005), Long and Freese (2014)) is justified.ⁱ Number of studies such as Ederington (1985) or Poon (2007) conclude that this model is superior in explaining and predicting corporate characteristics such as bond or credit rating.

i. Ordered logit models rely on the parallel regression assumption. A more general model, so-called generalized ordered-Logit model (Long and Freese (2014)) relaxes this assumption. We performed a Wald test developed by Brant (1990) in order to discriminate between the ordered-Logit model and the generalized ordered-Logit model. Results suggest that the ordered-Logit model best fit our data. Results are available upon request.

The ordered-Logit model is described as follows :^j

$$Y_{ij}^* = X\beta + e, \quad e | X \sim \Lambda(0, \frac{\pi^2}{3}) \quad (3.2)$$

$$\begin{cases} Y_{ij} = 1 & \text{if } Y_{ij}^* \leq 10\% \\ Y_{ij} = 2 & \text{if } 10\% < Y_{ij}^* \leq 50\% \\ Y_{ij} = 3 & \text{if } 50\% > Y_{ij}^* \end{cases} \quad (3.3)$$

where Y_{ij}^* is an unobserved continuous variable representing the degree of acquisition of the fund i in a cross-border firm j ; Y_{ij} is the ordered response taking on values $\{1, 2, 3\}$ if total holdings after the deal of the SWF i in the target firm j are 1) inferior to 10%; 2) larger or equal to 10% but smaller than 50% or; 3) larger or equal to 50%, respectively. X is a vector of explanatory variables and Lambda is the logistic function.

3.4.2.2. Results

Table 3.4 reports the results of ordered Logit models with, in the first column the estimates of the most general model and in the most rightwards column, results of the parsimonious model. . To complet these results, we estimate the marginal effects of the parsimonious model. These results are presented in table 3.5.

The results of the general parsimonious ordered-Logit model confirms the results of both Logit models on various aspects. First, regarding financial characteristics of the targeted firm, we find, once again, that the variables capturing the financial health of the targeted firm are not significant. It means that the financial variables that were found to be informative for cross-border investments (Avendaño (2012); Fernandes (2011) and Kotter & Lel (2011) find that SWFs are more prone to invest in large firms in terms of total assets; Kotter & Lel (2011) show that the firms with low return on assets are more likely to be targeted by SWFs) are not informative for decisions related to the degree of control in the case of GCC SWFs.

j. Appendix C.2 provides more details about the model.

Considering the economic and financial development of the target country, we find again that they are more prone to take the control of a firm in countries where there is a high quality of investors protection : a positive variation of the *ANTISELF* is associated with a decrease in the probability of minority investment of 0.397% but an increase of the probability of majority acquisition of 0.30. GCC SWFs are keen on taking majority stakes in the European Union : when the *EU DUMMY* is set equal to 1, it decreases the probability of minority investment by 0.28 while it increases the probability of taking an influential (resp. majority) stake by 0.08 (resp. 0.20).

Moreover, GCC SWFs do not target strategic sectors when taking majority stakes as the variables *FINANCE*, *ENERGY* and *INDUSTRY* are negatively related to influential and majority stakes. When the targeted firm operates in one of these sector, it increases the probability to take a minority stake by more than 0.40. This may suggest that GCC SWFs taking cross-border acquisition is not a way for these countries to acquire strategic interests abroad. On the other hand, it may be a consequence of the regulations aiming at preventing SWFs to take significant stakes in strategic sectors.^k Contrary to the results of the Logit model, results of the ordered Logit model indicates that GCC SWFs don't take into account the fact that the target firm operates in the luxury sector when deciding the degree of control they want.

In line with the results of the Logit analysis our third hypothesis, according to which GCC SWFs are more likely to take majority stakes in countries where there are bilateral trade agreements, is not supported by our estimates, as both proxies for bilateral trade agreements are found clearly non-significant. These results are consistent with Johan et al. (2013) who find that being a trade partner is not significant to explain SWFs investment choices. This result indicates that SWFs differ from other institutional investors in their investment strategies as Roque & Cortez (2014) show that bilateral trade contributes significantly to increase institutional investors' international equity investments.

k. Such regulations are in place in many developed countries such as the United States or the European Union Countries.

Not surprisingly we find that more transparent funds are more likely to take influential or majority stakes abroad. When a fund is transparent, the likelihood to take a minority stake decreases by 0.30 while the likelihood to take a majority stake (more than 50%) increases by 0.29. The hostility towards SWFs comes from the opaqueness of some of these investors. Consequently, transparent SWFs have no trouble taking influential stakes in cross-border companies.

At last, results of the ordered logit model confirm, unsurprisingly, that oil trade resources are a driver of GCC SWFs majority acquisitions. GCC SWFs are, indeed, financed by the proceeds from petroleum.

3. Determinants of Cross-border Majority Acquisitions of GCC SWFs

Table 3.4. – **Ordered logit estimation**

This table reports results for the ordered Logit model with robust standard errors. The endogenous variable (Y_{ij}^*) is an unobserved continuous variable representing the degree of acquisition of the fund i in a cross-border firm j ; $Y_{ij} = \{1, 2, 3\}$ if total holdings after the deal of the SWF i in the target firm j are $\{< 10\%, 10\% < Y_{ij}^* \leq 50\%, > 50\%\}$. Model (1) includes all possible explanatory variables while column (5) reports results of the parsimonious model. In our general-to-specific approach, variables selection is done relying on the AIC and BIC criteria.

	(1)	(2)	(3)	(4)	(5)
TRANSPARENT	1.100 *	0.968	1.089 **	1.200 **	1.256 **
	[0.781]	[0.625]	[0.522]	[0.488]	[0.565]
SUBSIDIARY	0.199				
	[0.579]				
EUDUMMY	1.860	1.980 *	1.407 ***	1.288 ***	1.298 ***
	[1.252]	[1.049]	[0.425]	[0.408]	[0.435]
ANTISELF	2.371 *	2.290 ***	1.987 ***	1.971 ***	1.261 *
	[1.329]	[0.887]	[0.752]	[0.707]	[0.764]
OILPRICE	2.070	2.070 *	2.059 *	1.903 *	2.199 **
	[1.310]	[1.113]	[1.066]	[1.027]	[1.109]
ROA	-0.027	-0.028			
	[0.032]	[0.028]			
DEBTASSETS	-1.752	-1.517	-1.102		
	[1.343]	[1.005]	[1.115]		
LIQUIDITY	0.027				
	[0.080]				
DEBT	0.002				
	[0.008]				
ASSETS	-0.000				
	[0.003]				
CRISIS	-0.668	-0.694	-0.560		
	[0.573]	[0.459]	[0.389]		
FTA FORCE	1.547	0.660			
	[2.123]	[1.106]			
FTANEGO	-0.208				
	[0.793]				
FDI	8.098	6.236			
	[15.884]	[9.334]			
logREER	3.457	3.389			
	[4.098]	[3.333]			
GDP	-0.000				
	[0.000]				
logKAOPEN	0.368				
	[2.011]				
LUXURY	1.115	1.094 *	1.129 **	0.987 *	
	[0.682]	[0.641]	[0.560]	[0.538]	
FINANCE	-1.974 **	-2.193 ***	-1.454 **	-1.422 **	-1.630 **
	[0.841]	[0.799]	[0.709]	[0.684]	[0.691]
ENERGY	-1.129	-1.037	-1.105 **	-1.114 **	-1.626 **
	[0.803]	[0.646]	[0.526]	[0.518]	[0.645]
INDUSTRY	-0.605	-0.599			-1.012 *
	[0.922]	[0.690]			[0.574]
METAL	-0.217				
	[0.962]				
SIZESWF	-4.656	-5.113	-5.100		
	[4.138]	[3.800]	[3.458]		
POLITY	0.234	0.198			
	[0.149]	[0.160]			
Constant cut 1	28.100	27.988 *	9.805 **	9.922 **	10.459 **
	[20.684]	[16.285]	[4.759]	[4.585]	[5.024]
Constant cut 2	29.732	29.612 *	11.471 **	11.532 **	11.952 **
	[20.674]	[16.261]	[4.818]	[4.634]	[5.076]
Log-likelihood	-103.842	-104.646	-118.424	-121.388	-110.076
AIC	259.685	245.291	260.848	260.777	238.151
BIC	330.365	294.384	294.692	286.159	262.618

* Significant at 10%; ** significant at 5%; *** significant at 1%.

Robust standard-errors are between brackets.

Table 3.5. – **Marginal effects at means of the ordered logit parsimonious model**

This table reports Conditional Marginal effects for the ordered Logit parsimonious model with robust standards errors presented in Table 3.4. Conditional Marginal Effects, also called Marginal Effects at the Means, are the Marginal Effects when all other variables equal their means. With binary independent variables, the marginal effects show how $P(Y = 0, 1, 2)$ (probability of a minority, influential or majority stake) changes when the categorical variable varies from 0 to 1, holding all other variables at their means. For continuous variables, the marginal effect measures the instantaneous rate of change of $P(Y = 0, 1, 2)$. In this case, dy/dx gives the change in probability for a country to take a minority, influential or large stake for an infinitesimal increase of the variable, holding all other variables at their means.

	Predict Y=0 Minority Stake	Predict Y=1 Influential Stake	Predict Y=2 Majority stake
TRANSPARENT	-0.307***	0.011	0.295**
EUDUMMY	-0.286***	0.085**	0.201***
OILPRICES	-0.462*	0.110	0.352*
ANTISELF	-0.397**	0.095	0.302**
ENERGY	0.418***	-0.169**	-0.250***
FINANCE	0.424***	-0.204**	-0.220***
INDUSTRY	0.291**	-0.120	-0.171***

3.5. Conclusion

While there is an extensive literature that investigates the determinants of SWFs investment decisions, only few papers address the question of the determinants of cross-border majority purchases. This is, however, a key question as it is clear that SWF activism generates more hostility by host-country governments. Using a unique database of 163 cross-border acquisitions from GCC SWFs in 28 target countries over the period 2006-2015, we aim to fill this gap in the literature. More precisely, we test if the usual determinants of SWFs investments stand in the case of majority acquisitions made by a distinct group among SWFs formed by GCC SWFs.

Several insights emerge from our analysis. First, firm-level characteristics are not relevant to explain GCC SWFs cross border majority acquisitions. They rather rely on country level characteristics when deciding to take an influential or a majority cross-border stake. More precisely, they prefer investing in countries presenting a high level of shareholder protection, preferably in the European Union.

Second, GCC SWFs don't target strategic sectors when taking influential or majority

stakes, indicating that acquiring large stakes is not a way for GCC countries governments to get strategic interests in the country.

Third, more transparent SWFs are more likely to take large cross-border stakes. It may be explained by the fact that the hostility towards SWFs comes from the opaqueness surrounding some funds and that they regulatory response to SWFs large investments depends on how transparent the fund is. This indicates that SWFs, wishing to be involved in foreign firms management, should improve their degree of transparency. Finally, they don't prefer to take large stakes in countries where there are bilateral agreements. This result indicates that SWFs differ from other institutional investors in their investment strategies.

Overall, our results shed new light on SWFs investment strategy, indicating that even if their objectives may go beyond pure profit maximization, acquiring majority stakes is not a lever for governments to get strategic interests in the targeted country. These results may be of interest for the regulator seeking the optimal regulatory response to the activism of SWFs.

Conclusion Générale

Résumé

L'objectif de cette thèse empirique est d'analyser deux principaux aspects de l'essor des fonds souverains. Le premier chapitre vise à identifier quels facteurs influencent la décision de créer un fonds tandis que le deuxième et troisième chapitres contribuent à mieux comprendre leur stratégie d'investissement.

De manière générale, le premier chapitre montre que la création d'un fonds souverain peut entrer dans le cadre des problématiques de gestion des réserves excédentaires puisque les pays disposant de réserves suffisantes pour couvrir leur dette publique sont plus susceptibles de créer un fonds. Cela est d'autant plus vrai pour les pays riches en ressources naturelles car d'une part, un fonds souverain peut permettre de contrebalancer les effets des chocs conjoncturels - i.e. variations du prix des matières premières, et d'autre part, en acheminant les réserves excédentaires vers l'étranger, il permet de limiter les effets du Dutch Disease et de la malédiction des ressources naturelles. Enfin, les résultats montrent que la décision de créer un fonds souverain peut revêtir une dimension politique puisque les gouvernements corrompus sont plus enclins à lancer ce type de fonds.

Toutefois, les résultats obtenus en analysant des sous-échantillons de fonds souverains indiquent que les déterminants de la création d'un fonds diffèrent en fonction de son

mode de financement et des objectifs qui lui sont attribués. Si la volatilité du prix du pétrole joue un rôle important dans la décision de créer un fonds de stabilisation, tel n'est pas le cas pour les autres types de fonds. A l'inverse, la dimension politique dans la décision de créer un fonds se confirme dans le cas des fonds d'investissement d'Etat et des fonds de développement, mais pas pour les fonds d'épargne et les fonds de stabilisation.

Le deuxième chapitre, qui s'intéresse aux stratégies d'investissement des fonds souverains, met en évidence la complexité inhérente à leurs décisions d'investissement. Nous avons montré, en effet, que la décision d'investir dans un pays donné ne répond pas à la même logique que la décision relative au montant qui sera investi. Par ailleurs, en incorporant de la dynamique dans le modèle, nous avons mis en évidence l'existence d'un phénomène de persistance dans la stratégie de ces investisseurs : lorsqu'un fonds décide d'investir dans un pays donné, il aura tendance à investir à nouveau dans ce pays et pour un montant similaire. Enfin, nos résultats montrent que les décisions d'investissement des fonds souverains s'expliquent par des facteurs macroéconomiques et non pas financiers, ce qui suggère que leurs objectifs vont au-delà de la recherche de rendements financiers.

Dans le prolongement de ce deuxième chapitre, le troisième chapitre de cette thèse analyse plus spécifiquement les déterminants des prises de participations majoritaires. Encore peu explorée par la littérature, cette problématique est pourtant au cœur des interrogations relatives à ces investisseurs. En se focalisant sur un groupe de fonds souverains particulièrement actifs, les fonds des pays du Golfe, nous avons montré que la décision de prendre une participation majoritaire dans une entreprise donnée est guidée par des facteurs différents de ceux qui influencent la décision d'investir. Les fonds souverains des pays du Golfe prennent en effet le contrôle d'une entreprise sans tenir compte de sa santé financière, ce qui indique qu'ils poursuivent d'autres objectifs que la seule recherche de profits financiers. En outre, nos résultats montrent que les fonds les plus transparents sont plus enclins à prendre des participations majoritaires et ce dans des pays assurant une forte protection des actionnaires et/ou les pays de l'Union Euro-

péenne. Enfin, nos résultats montrent que les fonds du Golfe ne ciblent pas les secteurs stratégiques lorsqu'ils prennent le contrôle d'une entreprise. Ces résultats suggèrent que même si les investissements des fonds des pays du Golfe ne sont pas guidés uniquement par la recherche de rendements financiers, les acquisitions majoritaires ne sont pas un levier utilisé par les gouvernements pour acquérir des intérêts stratégiques dans le pays ciblé.

Cette thèse présente plusieurs contributions empiriques. Le premier chapitre permet de combler une lacune de la littérature et d'apporter des éléments de réponse quant à l'explosion du nombre de fonds souverains depuis le début des années 2000. Dans le deuxième chapitre, l'utilisation d'une méthodologie adaptée à la complexité du processus de décision d'investissement des fonds souverains permet de mieux comprendre les facteurs qui influencent leur stratégie d'investissement. Enfin, le dernier chapitre contribue à la littérature sur la stratégie d'investissement des fonds souverains en identifiant les principaux facteurs qui influencent leur décision de prendre une participation majoritaire dans une entreprise à l'étranger.

Malgré les contributions de cette thèse, l'étude des fonds souverains se heurte nécessairement au manque de données. En effet, il serait intéressant d'analyser le rôle des consultants dans le processus de création d'un fonds souverain. Malheureusement, la faible disponibilité des données rend difficile l'analyse de cette problématique. En outre, si la méthodologie de notre base de données nous a permis de recenser l'ensemble des transactions rendues publiques, tel n'est pas le cas pour les investissements dans des entreprises non-cotées. Enfin, même lorsque les investissements sont publics, les montants des transactions ne sont pas toujours divulgués. Ainsi, malgré la pertinence de contrôler les résultats du troisième chapitre par rapport aux montants, cela n'a pas été possible en raison du nombre important de données manquantes.

Recherches futures

Cette thèse ouvre la voie à de nouvelles pistes de recherche. Le premier chapitre montre que la création d'un fonds souverain peut être un moyen de se prémunir contre les effets du Dutch Disease. Un prolongement intéressant de cette analyse consisterait à évaluer quel niveau d'investissement à l'étranger est nécessaire pour éviter le Dutch Disease. En outre, ce chapitre a permis d'identifier certains facteurs qui influencent la décision de créer un fonds. Cette analyse pourrait être prolongée en évaluant le seuil à partir duquel ces facteurs justifient de créer un fonds.

En outre, le deuxième chapitre se focalise sur les déterminants des investissements à l'étranger sans prendre en compte ni les opérations de désinvestissement, ni les investissements domestiques. Un premier axe de recherche consisterait à analyser les investissements domestiques des fonds souverains. Quels sont leurs déterminants ? Quel est leur impact sur l'économie du pays ? Un autre axe de recherche consisterait à analyser les déterminants des désinvestissements des fonds souverains ainsi que leur impact sur les marchés.

Le troisième chapitre de cette thèse montre que les fonds des pays du Golfe prennent des participations majoritaires pour des raisons autres que financières, mais que les investissements majoritaires ne représentent pas une menace pour les industries stratégiques. Une nouvelle piste de recherche consisterait à analyser si les fonds souverains ne ciblent pas les industries stratégiques lorsqu'ils prennent le contrôle par choix, ou parce que les récentes réglementations visant à contrôler les investissements des fonds souverains les en empêchent. Enfin, ce chapitre se focalise sur les fonds des pays du Golfe. Un nouvel axe de recherche consisterait à élargir cette analyse à l'ensemble des pays.

General Conclusion

Summary of the findings

The objective of this empirical dissertation is to analyze two main aspects of the rise of SWFs. The first chapter aims at identifying what factors influence the decision to establish a fund. The second and third chapters contribute to better understand the investment strategy of these investors.

Overall, the first chapter shows that establishing a SWF is a way to manage excess reserves as countries with enough reserves to cover their public debt are more likely to create a fund. This is particularly the case for natural resources rich countries as on the one hand, a SWF may be used to counterbalance the effects of commodity prices variations, and on the other hand, it helps to mitigate the effects of the Dutch Disease and the natural resources curse - i.e. because it allows the proceeds to go out of the domestic economy. Finally, our results show that the decision to establish a fund may have a political dimension since corrupted governments are more likely to create such a fund.

However, when splitting our sample, we find that the factors driving SWFs creation are different depending on the origin of the funding and the objective(s) assigned to the fund. If oil prices variations influence the decision to establish a macrostabilization fund, it doesn't explain the decision to establish other types of funds. Conversely, if the

decision to create a reserve investment or a development fund is influenced by political factors, there is no political dimension in the decision to establish a macrostabilization or a saving fund.

The second chapter of this dissertation focus on SWFs investment strategies and highlights the complexity of their investment decision-making process. Our results show, indeed, that the characteristics driving the decision to invest are different from those used to fix the amount of the investment. Moreover, the significance of the dynamic component included in the model suggests that SWFs tend to invest in countries they have already invested in and for similar amounts. Finally, our results show that SWFs investment decisions are driven by macroeconomic factors rather than financial, which suggests that their objectives go beyond pure profit maximization.

In line with this second chapter, the third chapter of this dissertation focus on the determinants of majority acquisitions made by SWFs. For now, this issue has been little studied in the literature, whereas majority investments are those that raise the most concerns. Focusing on a particularly active group of SWFs, SWFs of the Gulf Cooperation Council (GCC) countries , we show that the factors identified by the literature as driving the investment decision of SWFs don't stand in the case of majority acquisitions. When taking large cross-border stakes, GCC SWFs don't take into account the financial health of the targeted firm, which imply that GCC SWFs pursue other motives than the search for financial profit. Furthermore, our results show that transparent funds are more likely to take large stakes and that they do so predominantly in countries with a high level of shareholders protection and/or in European Union countries. Finally, we find that GCC SWFs don't target specifically strategic sectors. Overall, our results suggest that even if GCC SWFs investments are guided by objectives other than financials, taking majority stakes is not a lever for governments to get strategic interests in a targeted country.

This dissertation contributes to empirical research on SWFs. The first chapter contributes to fill a gap in the literature and to better understand the recent increase in the

number of SWFs. In the second chapter, using a methodology that allow to take into account the complexity of the decision-making process of SWFs investments contributes to identify the main drivers influencing SWFs investment strategy. Finally, the last chapter complete the existing literature on SWFs investment strategy by identifying the main determinants of cross-border majority acquisitions.

Despite the contributions of this dissertation, research on SWFs has to face the unavailability of data. It would be interesting indeed to analyze the role played by consultants in the decision to establish a fund. Unfortunately, the required data are not available. Moreover, the database built for this dissertation gathers only publicly listed transactions. And even when I found some details about the transactions, the amounts were not always disclosed. Then, it was not possible in the third chapter to control our results with the amount of the investment.

Further Research

This dissertation opens up the way to new research projects. The first chapter shows that the creation of a SWFs may be a mean to prevent the effects of the Dutch Disease. Further research could evaluate the level of foreign investment required to avoid Dutch Disease. Moreover, this chapter identifies some of the factors driving the decision to create a fund. This analysis could be deepen by evaluating the threshold from which these variables justify to create a fund.

The second chapter of this thesis focus on the determinants of SWFs cross-border investments but don't analyze either domestic investments nor divestments. Further research should analyze first, SWFs domestic investments. What are the determinants of these investments? What is their impact on the local economy? Second, it would be interesting to investigate the determinants of SWFs divestments and to evaluate their impact on financial markets.

The third chapter of this dissertation shows that GCC SWFs take majority stakes for reasons other than financial, but that these majority investments don't threaten strategic

industries. It would be interesting to deepen this issue by testing if SWFs don't want to target strategic sectors, or if they don't take large stakes in strategic sectors because of the regulations that prevent them to do so. Finally, this chapter focus only on GCC SWFs. Further research should enlarge this analysis by studying other major SWFs.

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Appendix

A. Appendix to Chapter 1

A.1. List of SWFs created over the period 2000-2016

Country	Inception	Name of the SWF	SWF Institute Ranking	Origin	AUM*	Objectives
Algeria	2000	Revenue Regulation Fund	Yes	Oil and Gas	50	Macro stabilization
Angola	2007	Reserve Fund for Oil	No	Oil	0.2	Macro stabilization
Angola	2012	Fundo Soberano de Angola	Yes	Oil	4.88	Reserve Investment
Australia	2006	Australian Future Fund	Yes	Non-Commodity	95	Saving / Pension
Australia	2012	Western Australian Future Fund	Yes	Minerals	0.3	Saving / Pension
Bahrain	2006	Bahrain Muntalakat Holding Company	Yes	Non-Commodity	11.1	Reserve Investment
Bolivia	2012	FINPRO	Yes	Non-Commodity	1.2	Domestic economic support
Brazil	2008	Sovereign Fund of Brazil	Yes	Non-Commodity	5.3	Macro stabilization
Chile	2006	Pension Reserve Fund	Yes	Copper	7.9	Saving / Pension Domestic economic support
Chile	2007	Economic and Social Stabilization Fund	Yes	Copper	15.2	Macro stabilization
China	2000	National Social Security Fund	Yes	Non-Commodity	236	Saving / Pension
China	2007	China Africa Development Fund	Yes	Non-Commodity	5	Reserve Investment
China	2007	China Investment Corporation	Yes	Non-Commodity	746.7	Reserve Investment
Colombia	2012	Fondo Soberano de Colombia	No	Oil	2.5	Macro stabilization
France	2008	BPI (ex FSI)	No	Non-Commodity	25.5	Saving / Pension Domestic Economic Support
Ghana	2011	Ghana Petroleum Funds	Yes	Oil	0.45	Macro stabilization
Indonesia	2006	Government Investment Unit	No	Non-Commodity	0.3	Saving/Pension Domestic Economic Support
Iran	2011	National Development Fund of Iran	Yes	Oil and Gas	62	Saving / Pension
Iraq	2003	Development Fund for Iraq	Yes	Oil	0.9	Domestic Economic Support
Ireland	2001	Ireland Strategic Fund	Yes	Non-Commodity	23.5	Domestic Economic Support
Italy	2011	Italian Strategic Fund	No	Non-Commodity	6	Domestic Economic Support
Kazakhstan	2000	Kazakhstan National Fund	Yes	Oil and Gas	77	Macro stabilization
Kazakhstan	2008	Samruk-Kazyna JSC	Yes	Non-Commodity	85.1	Macro stabilization Domestic Economic Support
Kazakhstan	2012	National Investment Corporation of the National Bank of Kazakhstan	Yes	Oil	2	Saving / Pension
Korea	2005	Korea Investment Corporation	Yes	Non-Commodity	95.8	Reserve Investment
Libya	2006	Libyan Investment Authority	Yes	Oil	66	Macro stabilization Saving / Pension Domestic economic support

Country	Inception	Name of the SWF	SWF Institute Ranking	Origin	AUM*	Objectives
Malaysia	2009	Malaysia Development Berhad	No	Non-Commodity	3.2	Domestic Economic Support
Mexico	2000	Oil Revenues Stabilization Fund of Mexico	Yes	Oil	6	Macro-stabilization
Mexico	2014	Fondo Mexicano del Petroleo	Yes	Oil and Gas	nc	Macro-stabilization
Mongolia	2011	Fiscal Stability Fund	Yes	Minerals	0.3	Domestic Economic Support
New Zealand	2003	New Zealand Superannuation Fund	Yes	Non-Commodity	20.2	Saving / Pension
Nigeria	2011	Nigeria Sovereign Investment Authority	Yes	Oil and Gas	1.4	Reserve Investment
Nigeria	2012	Bayelsa Development and Investment Corporation	Yes	Non-Commodity	1.5	Domestic economic support
Oman	2006	Oman Investment Fund	Yes	Oil	6	Domestic Economic Support
Panama	2012	Fondo de Ahorro de Panama	Yes	Non-Commodity	1.2	Reserve Investment
Papua New Guinea	2011	Papua New Guinea SWF	Yes	Gas	nc	Macro-stabilization
Qatar	2005	Qatar Investment Authority	Yes	Oil and Gas	256	Domestic economic support
Russia	2008	National Welfare Fund	Yes	Oil	73.18	Reserve Investment
Russia	2008	Reserve Fund	Yes	Oil	65.7	Macro-stabilization
Russia	2011	Russian Direct Investment Fund	Yes	Non-Commodity	13	Domestic Economic Support
Saudi Arabia	2008	Public Investment Fund	Yes	Oil	160	Domestic Economic Support
Senegal	2012	Senegal FONSIS	Yes	Non-Commodity	1	Domestic Economic Support
Sudan	2002	Oil Revenues Stabilization Fund	No	Oil	0.08	Reserve Investment
Trinidad and Tobago	2000	Heritage and Stabilization Fund	Yes	Oil	5.5	Macro-stabilization
UAE	2002	Mubadala Development Company	Yes	Oil	66.3	Domestic Economic Support
UAE	2005	RAK Investment Authority	Yes	Oil	1.2	Domestic Economic Support
UAE	2006	Investment Corporation of Dubai	Yes	Non-Commodity	183	Reserve Investment
UAE	2007	Abu Dhabi Investment Council	Yes	Oil	110	Reserve Investment
UAE	2007	Emirates Investment Authority	Yes	Oil	15	Domestic economic support
United States	2011	North Dakota Legacy Fund	Yes	Oil and Gas	3.2	Reserve Investment
United States	2014	West Virginia Future Fund	Yes	Oil and Gas	nc	Saving / Pension
Venezuela	2005	National Development Fund (FONDEN)	No	Oil	15-20	Domestic economic support
Vietnam	2005	State Capital Investment Corporation	Yes	Non-Commodity	0.5	Domestic Economic Support

*Assets Under Management (USD bln.). Source : SWF Institute

A.2. Description of the variables

Variables	Description	Source
SWF DUMMY	Country dummy equal to 1 if the country established at least one fund in year t and 0 otherwise	Authors' analysis
COMMODITY SWF	Country dummy equal to 1 if the country established at least one SWF funded mainly from oil exports, gas or other minerals in year t and 0 otherwise	Authors' analysis
NON-COMMODITY SWF	Country dummy equal to 1 if the country established at least one SWF funded by the transfer of assets from both government budget surpluses and excess foreign reserves in year t and 0 otherwise	Authors' analysis
MACROSTAB. SWFs	Country dummy equal to 1 if the country established at least one SWF with the aim to counterbalance commodity prices fluctuations in year t and 0 otherwise	Authors' analysis
SAVING	Country dummy equal to 1 if the country established at least one SWF with the aim to create a reserve of wealth for the future (funds for future generations or financing pensions) in year t and 0 otherwise	Authors' analysis
RESERVE SWFs	Country dummy equal to 1 if the country established at least one SWF with the aim to maximize returns in year t and 0 otherwise	Authors' analysis
DOMESTIC SUP-PORT	Country dummy equal to 1 if the country established at least one SWF with the aim support the domestic economy in year t and 0 otherwise	Authors' analysis
GDP	Gross domestic product in current U.S. dollars	The World Bank
$\Delta \log \text{GDP}$	Difference between $\log \text{GDP}_t$ and $\log \text{GDP}_{t-1}$	
RENT	Total natural resources rents of country j the year $(t-1)$ expressed in percentage of the GDP of country j . Estimates are based on sources and methods described in " <i>The Changing Wealth of Nations : Measuring Sustainable Development in the New Millennium</i> " (World Bank, 2011).	The World Bank
EXCESS RESERVES	Dummy variable that equals 1 if the ratio $\text{RESERVES}/\text{DEBT} > 1$ and 0 otherwise. RESERVES is the total reserves including gold expressed in current U.S. dollars of country j , the year $(t-1)$. DEBT is the Public Debt of country j the year $(t-1)$	The World Bank & International Monetary Fund
$\Delta \text{OILPRICE}$	Difference between the average crude oil prices of year t and the average crude oil prices of year $t-1$	International Monetary Fund
ΔREER	Difference between REER_t and REER_{t-1} . REER_t is the consumer price index-based real effective exchange rate of year t	Bruegel database
CORRUPTION	Dummy variable that equals 1 if the ICRG corruption index is lower than 3 (the country is corrupted) and 0 otherwise. The ICRG corruption index is an assessment of corruption within the political system which ranges from 0 to 6. The higher the index is, the lower the country is corrupted	International Country Risk Guide (ICRG)
POLITY	Dummy variable that equals 1 if the Polity IV index is negative (the country tends to be autocratic) and 0 otherwise. The Polity IV index is an assessment of the level of authority of a regime. The index ranges from -10 to 10. The higher the index is, the more democratic is the country	Polity IV Project
RENT x POLITY	Interaction variable between the polity dummy variable and the natural resources rents	Authors' analysis
RENT x CORRUPTION	Interaction variable between the corruption dummy variable and the natural resources rents	Authors' analysis

B. Appendix to Chapter 2

B.1. Characteristics of SWFs

Country	Fund name	Assets Under Management	Founding date	Source of the funds	Policy purpose	Presence of politicians in the SWF board
Australia	Queensland Investment Corporation	70.6	1992	Fiscal	Unknown	Yes
Australia	Victorian Funds Management Corporation	46.6	1994	Unknown	Unknown	No
Australia	Australian Future Fund	95	2006	Non-commodity	Saving	No
Bahrain	Bahrain Mumtalakat Holding Company	10.5	2006	Non-commodity	Saving Reserve investment	Unknown
China	China Investment Corporation	652.7	2007	Non-commodity	Reserve investment	Yes
China	China SAFE Investment	567.9	1997	Non-commodity	Reserve investment	Yes
China	National Social Security Fund	201.6	2000	Non-commodity	Reserve investment	Yes
China	China-Africa Development Fund	5	2007	Non-commodity	Reserve investment	Yes
France	France Strategic investment fund	25.5	2008	Non-commodity	Pension reserve	Yes
Kazakhstan	Samruk Kazyna National Wealth Fund	77.5	2008	Non-commodity	Stabilisation Saving Pension reserve	No
Kuwait	Kuwait Investment Authority	548	1953	Oil and gas	Stabilisation Saving	Yes
Libya	Libyan Investment Authority	66	2006	Oil and gas	Saving	Yes
Malaysia	Khazanah Nasional	40.5	1993	Non-commodity	Saving	No
New Zealand	New Zealand Superannuation Fund	28.98	2001	Non-commodity	Pension reserve	Yes
Oman	State General Reserve Fund	13	1980	Oil and gas	Stabilisation Reserve investment	No
Oman	Oman Investment Fund	6	2006	Oil and gas	Reserve investment	No
Qatar	Qatar Investment Authority	170	2005	Oil and gas	Saving Reserve investment	No
Saudi Arabia	Kingdom Holding	19.6	1996	Oil and gas	Reserve investment	Unknown
Singapore	Government of Singapore Investment Corporation	320	1981	Non-commodity	Saving Reserve investment	No
Singapore	Temasek	177	1974	Non-commodity	Saving Reserve investment	No
South Korea	Korea Investment Corporation	72	2005	Non-commodity	Reserve investment	Yes
UAE	Dubai Holding	NA	2004	Oil and gas	Unknown	Yes
UAE	Dubai World	NA	2004	Oil and gas	Reserve investment	Yes
UAE	Abu Dhabi Mubadala Development Company	60.9	2002	Oil and gas	Reserve investment	No
UAE	Abu Dhabi International Petroleum Investment Company	68.4	1984	Oil and gas	Reserve investment	Yes
UAE	Abu Dhabi Investment Authority	773	1976	Oil and gas	Saving Reserve investment	Yes
UAE	Ras-al-Khaimah Investment Authority	1.2	2005	Oil and gas	Reserve investment	No
UAE	Investment Corporation of Dubai	70	2006	Oil and gas	Reserve investment	No
UAE	Abu Dhabi Investment Council	90	2007	Oil and gas	Reserve investment	Yes

B.2. Littérature Review - Country level factors as drivers of SWFs investments

Title	Authors	Year	Model	Endogeneous variable	Explanatory variables	Main Results
The investment strategies of SWF	Bernstein, Lerner and Scholar	2013	Cross-section OLS Regression	Acquisition stake	Political factors	The involvement of external managers and the presence of politicians on the board lead to smaller acquisitions but the impact of politicians compared to external managers is weaker.
SWF : their investment strategies and performance	Chhaochharia and Laeven	2009	Cross-section gravity model	log difference between the share of country j in total equity investment by SWFs from country i and the share of country j in the world equity market	Financial, geographical factors	SWFs tend to invest in countries that share a common culture but this cultural bias disappear with repeated investments. SWFs display industry bias (more investments in oil company stocks) and tend to invest mostly in large capitalization stock.
What is different about government-controlled acquirers in cross-border acquisitions	Karolyi and Liao	2017	Cross section model	Dummy variable equal to 1 if the firm is targeted by a SWFs and 0 if it is targeted by other government-controlled entities	Financial factors	SWFs are more likely to be influenced by market valuations relative to other government-led acquirers. There are important differences between government led acquirers and SWFs. SWF-led acquisitions are less likely to fail, they are more likely to pursue acquirers that are larger in total assets and with fewer financial constraints.
Bilateral Political Relations and SWF investment	Knüll, Lee and Mauck	2012	Cross-section Tobit and Cragg Models	Investment amount	Economic, Financial, Institutional, political and geographical factors	Economic factors are negatively related to the investment decision of SWFs whereas the geographical and institutional distances are positively related to the decision to invest. Political relations are an important factor in where SWFs invest but matter less in determining the size of the investment.
SWF Investments : from firm-level preferences to natural endowments	Avendano	2012	Cross-section regression and gravity model	Bilateral holding	Economic and financial factors	SWF equity allocation is not fully explained by firm-level determinants. Other factors related to diversification and natural endowments (e.g. forest areas, fuel exports), partially explain the shift of SWF equity investments towards commodity and natural resource sectors.
Are SWFs' investments politically biased? A comparison with mutual funds	Avendano and Santiso	2009	Descriptive analysis	N/A	Political factors	SWFs and mutual funds' investments converge when looking at the political profile of targeted countries.
Determinants of SWF cross-border investments	Meggison, You and Han	2013	Cross-section Tobit model	Ratios based on the amount invested by SWFs	Economic, financial, geographical and cultural factors	From the target country's perspective, high levels of investor protection, strong economic performance, and well developed local capital markets attract higher levels of inbound SWF investment. Moreover, SWFs are likely to invest in countries sharing the same culture, and investment value will be higher if the bilateral trade between the acquirer and target countries is higher. The results of this study suggest that SWFs act as purely commercial investors facilitating cross-border corporate investment.
Determinants of SWF investment in private equity vs. public equity	Johan, Knüll and Mauck	2013	Probit model	Dummy variable equals to 1 if the target firm is private and 0 otherwise	Financial, geographical and cultural factors	Cross-border investment by SWFs involves target nations where investor protection is low. SWFs are more likely to invest in private equity when the bilateral political relations between the countries are low. Cultural differences are positively related to the decision to invest in private equity abroad.
Are SWFs contrarian investors	Chiarlone and Miceli	2014	Panel probit and tobit models	Investment decision and the share of equity investment in country j at time t on total equity investments by all SWFs at time t	Economic, financial and institutional factors	SWFs prefer to invest in countries with a higher degree of economic development, larger and more liquid financial markets, institutions that offer better protection of legal rights, and a more stable macroeconomic environment.

B.3. Description of the variables

Variable	Definition	Source
SWF DUMMY	Dummy variable that takes the value or one if there is at least one SWF investment in country i over the period 2000-2013, and zero otherwise	
SWF DEAL	Number of deals in which the target is from country i and the acquirer is a Sovereign Wealth Fund from country j	
SWF AMOUNT	Average value of the deals in which the target is from country i and the acquirer is a Sovereign Wealth Fund from country j	
DIST	Geographic distance in kilometers between the capital city of countries i and j . We obtained latitude and longitudes of capital cities of each country and apply the formula : $6378 \times \arccos[\sin(\text{latAcquirer}) \times \sin(\text{latTarget}) + \cos(\text{latAcquirer}) \times \cos(\text{latTarget}) \times \cos(\text{lonTarget} - \text{lonAcquirer})]$, where lat and lon are latitudes and longitudes (following the methodology of Knill et al. (2012b))	Maps of World
GDP	Difference in the Average Annual Real Growth Rate of the Gross Domestic Product from 2000 to 2013 between acquirer and target country.	World Bank Development Indicators
INFLATION	Difference in the Inflation Rate measured by the Consumer Price Index from 2000 to 2013 between acquirer and target country.	World Bank Development Indicators
REER	Annual Consumer Price Index Based Real Effective Exchange Rates considering 41 trading partners from 2000 to 2013 taken in difference between countries j and i .	Bruegel
POLITY	Polity score of the Polity IV Project that captures the level of authority of a regime, ranging from -10 (hereditary monarchy) to 10 (consolidated democracy), taken in difference between countries j and i .	Center for Systemic Peace
KAOPEN	Difference in the Normalized KAOPEN index taken between acquirer and target country. Initially introduced by Chinn and Ito (2006), this index measures a country's degree of capital account openness. As the index is not available for 2013, the values for this year has been estimated by the authors (linear interpolation). The higher the index is, the more the country is financially opened.	
RELIGION	Dummy variable which is equal to 1 if country i and j has the same predominant religion and 0 otherwise.	CIA World Factbook
GOV STAB	Difference in the ICRG Government Stability index between acquirer and target country. The ICRG government stability index assesses both the ability of a country to carry out its declared program, and its ability to stay in office. The subcomponents are : i) Government Unity ; ii) Legislative Strength ; iii) Popular Support. The higher the index is, the lower is the risk (ranging from 0 to 12).	ICRG
CORRUPTION	Difference in ICRG Corruption index between acquirer and target country. The ICRG corruption index assesses the corruption within the political system. The higher the index is, the lower is the corruption (ranging from 0 to 6).	ICRG
COMMODITY	Dummy variable that is equal to 1 if the SWF's funds come from commodity revenues (oil, gas, minerals) and 0 otherwise.	SWF Institute SWFs' websites
LARGE	Dummy variable that is equal to 1 if the assets under management of a SWF are superior to USD 100 billion, and 0 otherwise.	SWF Institute SWFs' websites
POLITICIANS	Dummy variable that is equal to 1 if there is at least one politician on the board of one of the SWFs of a country, and 0 otherwise.	SWF Institute SWFs' websites

C. Appendix to Chapter 3

C.1. Description of the variables

Variables	Description	Source
GDP	GDP per capita of the target country of year $t - 1$	The World Bank
CRISIS	Dummy variable equals to 1 in 2008 and 2009, and 0 otherwise	Authors' analysis
UE DUMMY	Dummy variable equals to 1 if the target country is in the Europe, and 0 otherwise	Authors' analysis
ANTISELF	Anti-self dealing index of the target country. The anti-self dealing index is a measure of legal protection of minority shareholders against expropriation by corporate insiders.	Djankov et al. (2005)
FTA FORCE	Dummy variable equals to 1 if there is a free-trade agreement in force between the country of the SWF and the target country, and 0 otherwise	Governments' websites
FTANEGO	Dummy variable equals to 1 if there is a free-trade agreement in force or under negotiations between the country of the SWF and the target country, and 0 otherwise	Governments' websites
ASSETS	Mean of the total assets in $t - 1$, $t - 2$, $t - 3$ of the targeted firm	Orbis database
ROA	Mean of the ROA in $t - 1$, $t - 2$, $t - 3$ of the targeted firm	Orbis database
DEBT/ASSETS	Ratio between the mean of the long term debt in $t - 1$, $t - 2$, $t - 3$ and the total assets in $t - 1$, $t - 2$, $t - 3$ of the targeted firm	Orbis database
LIQUIDITY	Mean of the liquidity ratio in $t - 1$, $t - 2$ and $t - 3$ of the targeted firm	Orbis database
DEBT	Mean of the long term in $t - 1$, $t - 2$ and $t - 3$ of the targeted firm	Orbis database
LARGE	Dummy variable equals to 1 if the SWF manage more than USD 100M, and 0 otherwise	SWF Institute
TRANSPARENT	Dummy variable equals to 1 if the Lindaburg-Maduell Transparency index of the SWF is higher than 5 and 0 otherwise. The index ranges between 0 and 10. The higher the index is, the more transparent is the SWF	SWF Institute
SUBSIDIARY	Dummy variable equals to 1 if the acquisition was made by a subsidiary of the SWF and 0 otherwise	Factiva (mainly)
FDI	FDI Regulatory Restrictiveness index of the targeted country, measuring statutory restrictions on foreign direct investment	OECD
logREER	Logarithm of the consumer price index-based real effective exchange rate of the targeted country in $t - 1$	Bruegel Database
logKAOPEN	Logarithm of the normalized KAOPEN index of the targeted country in $t - 1$. Initially introduced by Chinn and Ito (2006), this index measures a country's degree of capital account openness.	Chinn-Ito website
OIL PRICE	Logarithm of the average crude WTI crude oil price in year $t - 1$ (DCOILWTICO)	FRED database
POLITY	Dummy variable that equals 1 if the Polity IV index is negative (the country tends to be autocratic) and 0 otherwise. The Polity IV index is an assessment of the level of authority of a regime. The index ranges from -10 to 10. The higher the index is, the more democratic is the country	Polity IV Project

C.2. The Ordered Logit Model

Let Y be the ordered response taking on values $\{1, 2, 3\}$ if total holdings after the deal of the SWF in the target firm are 1) inferior to 10% ; 2) larger or equal to 10% but smaller than 50% or ; 3) larger or equal to 50%, respectively. The ordered logit model for Y conditional on explanatory variables X can be derived from a latent variable model. Assume that a latent variable Y^* is determined by :

$$Y^* = X\beta + e, \quad e | X \sim \text{Logistic}(0, \frac{\pi^2}{3}) \quad (.4)$$

where β is $K \times 1$ and X does not contain a constant.

Let $\alpha_1 < \alpha_2$ be unknown cut points, and define :

$$\begin{cases} Y = 1 & \text{if } Y^* \leq \alpha_1 \\ Y = 2 & \text{if } \alpha_1 < Y^* \leq \alpha_2 \\ Y = 3 & \text{if } \alpha_2 > Y^* \end{cases} \quad (.5)$$

As Y^* crosses unknown thresholds α , we move up the ordering of alternatives. For example, with a very low Y^* , i.e. smaller than α_1 , we get a minority stake. For a very high Y^* , i.e. larger than α_2 , we get a majority stake. Given the standard logistic assumption for e , we can derive the conditional distribution of Y given X , so the choice probabilities are :

$$\begin{cases} P(Y = 1 | X) = P(Y^* \leq \alpha_1 | X) = \frac{1}{1 + \exp(X\beta - \alpha_1)} \\ P(Y = 2 | X) = P(\alpha_1 < Y^* \leq \alpha_2 | X) = \frac{1}{1 + \exp(X\beta - \alpha_2)} - \frac{1}{1 + \exp(X\beta - \alpha_1)} \\ P(Y = 3 | X) = P(\alpha_2 > Y^* | X) = 1 - \frac{1}{1 + \exp(X\beta - \alpha_2)} \end{cases} \quad (.6)$$

The cut-points α and the parameters β are estimated by maximum likelihood. The interpretation of the β s are of limited interest as they relate to Y^* while our focus is on the categorical variable Y . The partial effects of X_k on the probabilities are the following :

$$\begin{cases} \partial P(Y = 1 | X) / \partial X_k = - \left(\frac{\exp(X\beta - \alpha_1)}{(1 + \exp(X\beta - \alpha_1))^2} \right) \beta_k \\ \partial P(Y = 2 | X) / \partial X_k = \left(\frac{\exp(X\beta - \alpha_2)}{(1 + \exp(X\beta - \alpha_2))^2} - \frac{\exp(X\beta - \alpha_1)}{(1 + \exp(X\beta - \alpha_1))^2} \right) \beta_k \\ \partial P(Y = 3 | X) / \partial X_k = \left(\frac{\exp(X\beta - \alpha_2)}{(1 + \exp(X\beta - \alpha_2))^2} \right) \beta_k \end{cases} \quad (.7)$$

The partial effects on $P(Y = 1 | X)$ and $P(Y = 3 | X)$ are unambiguously determined by the sign of β_k , while the sign is not conclusive for the effect on the intermediate category. Since partial effects are conditional on specific values for X , we will follow common practice by setting the variables at their average values.

Trois essais sur l'essor des fonds souverains

Jeanne Amar

Résumé

Si les fonds souverains ne sont pas nouveaux, leur nombre et leur pouvoir financier n'ont cessé de croître depuis le début des années 2000, suscitant de nombreuses interrogations quant aux risques associés à ces investisseurs, notamment dans les pays développés. Les fonds souverains sont-ils guidés par les mêmes motivations que les investisseurs institutionnels ? Le pouvoir financier des fonds souverain risque-t-il de déstabiliser les marchés financiers ou au contraire peut-il avoir un effet contracyclique ? Ces interrogations ont fait des fonds souverains un thème de recherche à part entière dans lequel s'inscrit cette thèse.

La problématique de la multiplication des fonds souverains revêt une importance particulière, à la fois pour les pays désireux de créer des fonds, et pour le régulateur, soucieux de mettre en place un cadre légal adapté à ces investisseurs particuliers. Dans cette perspective, le premier essai identifie les principaux facteurs susceptibles d'inciter un pays à créer un fonds souverain. En outre, les stratégies d'investissement des fonds souverains suscitent de nombreuses interrogations. Leurs décisions d'investissement sont-elles guidées uniquement par un objectif de rendement financier ou les fonds souverains poursuivent-ils des objectifs plus stratégiques ? Le deuxième essai met en évidence la complexité du processus de décision des fonds souverains en testant s'ils préfèrent investir dans des pays qui leurs sont familiers et/ou dans des pays dans lesquels ils ont déjà investi par le passé. Dans le prolongement de cette analyse, le troisième essai s'intéresse plus spécifiquement aux déterminants des prises de participations majoritaires des fonds souverains en se focalisant sur un groupe de fonds particulièrement actifs : les fonds des Pays du Golfe. Plus précisément, cette analyse vise à identifier les facteurs, à la fois microéconomiques et macroéconomiques, qui influencent la décision de prendre le contrôle dans une entreprise donnée.

Mots-clés : Finance Internationale, Fonds Souverains, Investissements à l'Etranger, Analyse des Données de Panel.

Abstract

If Sovereign Wealth Funds (SWFs) are not new, their number and their financial power have grown sharply since the beginning of the 2000's, which raise concerns, particularly among developed countries. Are SWFs' motives comparable to other institutional investors' ? May SWFs investments destabilize financial markets or, on the contrary, do they have a countercyclical effect ? These concerns have encouraged researchers, both in economics and finance, to investigate the issues raised by SWFs and it has now become a subject of research in its own rights. This dissertation is in line with this literature.

Understanding the emergence of SWFs is of particular importance both for countries, wondering if they should or should not establish SWFs, and for the regulator, aiming at developing a regulatory framework adapted to these particular investors. With this in mind, the first essay of this dissertation identifies the main factors driving the decision to establish a fund. Moreover, investment decisions of SWFs are not well understood yet. Are SWFs investments driven by the search for financial profits or do they pursue more strategic objectives ? The second essay highlights the complexity of the investment decision-making process of SWFs, testing if they rather invest in countries with which they share common characteristics and/or in countries where they have already invested. In line with this second essay, the third essay analyzes more specifically the determinants of majority acquisitions made by SWFs by focusing on some particularly active funds : Gulf Countries' SWFs. More precisely, this analysis aims at identifying both microeconomic and macroeconomic factors driving the decision to acquire a majority stake in a cross-border firm.

Keywords : International Finance, Sovereign Wealth Funds, Cross-Border Investments, Panel Data Analysis.