The Economic and Social Impact of State Divestiture:
A Comparison Between MENA Countries and Other Regions

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Résumé exécutif

Les pays développés et en développement, y compris les pays en transition vers l'économie de marché, reconnaissent aujourd'hui que la privatisation est un élément majeur du développement économique. La privatisation des entreprises publiques est l'un des axes de la réforme introduite par les plans d'ajustement structurels préconisés par la Banque Mondiale à la suite de la crise de l'endettement qu'à connu certains pays en développement. Ces réformes d'inspiration libérale visent l'ouverture de l'économie à la concurrence à la fois interne et externe, le renforcement du secteur privé, l'accroissement de l'épargne nationale et le désengagement de l'Etat des secteurs de la production et des services.

Les débats politiques relatif à la privatisation se sont plutôt recentrés sur les aspects suivants : (i) les mécanismes de transfert des actifs au secteur privé, (ii) ce qui doit être privatisées, (iii) qui a droit d'acquérir les actifs, et (iv) la vitesse avec laquelle la privatisation devrait s'opérer. Toutefois, la question de savoir s'il faut privatiser ou non a été passée sous silence. Les décideurs politiques se sont engagés dans un processus de transition en douceur en arguant que ce qui était considéré comme une politique macro-économique appropriée sera ipso facto appropriée pour la réduction de la pauvreté. Aussi surprenant que cela puisse paraitre, l'impact potentiel de la privatisation sur l'emploi et les inégalités a été malheureusement négligé. D'ailleurs, les études qui tentent d'évaluer à l'échelle macroéconomique l'impact social de la privatisation sont quasi-inexistantes.

Cette étude a pour objet de combler ces lacunes. Plus précisément, l'étude vise à jauger l'impact social de la privatisation à travers ses effets sur l'emploi et les inégalités. Elle vise également à évaluer l'impact de la privatisation sur la taille et la liquidité des marchés boursiers. Cette étude est composée de deux grandes parties. Une première partie a trait à l'impact de la privatisation sur le développement du marché boursier. Dans une première section, l'accent est focalisé sur les effets micro et macro de la privatisation ainsi que sur la relation entre la privatisation et la croissance tout en s'attardant sur les fondements théoriques de la relation entre la privatisation et le développement du marché boursier. La deuxième section étudie empiriquement la dynamique entre la privatisation et le développement du marché boursier. A cette fin, la méthodologie de l'économétrie des données de panel est utilisée sur un échantillon de pays appartenant à quatre régions, à savoir l'Afrique, l'Asie,

l'Amérique Latine et la région MENA. La deuxième partie de l'étude étudie l'impact social de la privatisation. Sa première section procède en deux étapes. Dans un premier temps, l'effet de la privatisation sur l'emploi est analysé tandis que dans un second temps, l'impact de la privatisation sur l'inégalité est étudié. La deuxième section, quant à elle, quantifie et analyse empiriquement l'impact social de la privatisation avec ses deux aspects, inégalité et emploi. La dernière partie propose les principales implications politiques.

Les résultats empiriques avancés dans cette étude indiquent que les effets de la privatisation sur les inégalités sociales sont plus ambigüs et dépendent de surcroit de la région et de la métrique utilisée. Il a été trouvé que les recettes de la privatisation ont un effet négatif sur l'inégalité lorsqu'il s'agit des pays africains ou ceux d'Amérique Latine. Leurs effets sur les pays européens ou asiatiques sont plutôt positifs. S'agissant des effets de la privatisation sur l'inégalité dans le cas des pays de la zone MENA, les résultats se sont révélés plutôt non concluants. De surcroît, ils ont montré que la privatisation est un des déterminants de la dynamique au niveau du marché de l'emploi. Il a été montré que, en moyenne, les recettes de la privatisation contribuent à baisser le niveau de chômage juste une année après la date à laquelle la privatisation a lieu. Mieux encore, les recettes générées à partir de la privatisation via le marché boursier semblent affecter négativement le marché de l'emploi et ses effets sont distribués sur les années qui suivent l'année de la privatisation.

De manière générale, les résultats empiriques témoignent d'un effet positif de la privatisation sur le développement du marché boursier, car ils soulignent l'engagement des gouvernements à adopter des politiques moins risquées favorisant le libre jeu des marchés. Il convient de souligner que ces résultats doivent être interprétés en tenant compte de la méthode de privatisation suivie. Par exemple, ce n'est que très récemment que les pays africains et ceux de la zone MENA ont-ils commencé à privatiser à grande échelle. De même, la plupart des transactions effectuées étaient des ventes directes aux investisseurs, et par conséquent un nombre limité de firmes privatisées étaient réellement cotées en bourse. En revanche, dans les pays asiatiques, la privatisation a commencé depuis les années 1980, relativement plus tôt que dans n'importe quelle autre région. Par conséquent, l'effet de la privatisation sur développement du marché boursier met du temps pour se matérialiser.

Les résultats empiriques ont montré également que le mode de privatisation par offre publique (OPA) n'a pas d'effets significatifs sur le développement des marchés boursiers

dans toutes les régions, à l'exception de l'Asie. Ces résultats s'expliquent par le fait que les pays asiatiques ont privatisé de manière intensive par OPA contrairement à ceux d'Amérique Latine où la privatisation s'est surtout opérée via les ventes privées à des investisseurs privés ou via une combinaison de ventes privées et publiques pour la même entreprise. En Afrique, la privatisation a souvent eu lieu par OPA, mais la faible capacité d'absorption et la faible liquidité des marchés africains n'ont pas contribué à renforcer la confiance des investisseurs. La région MENA, en revanche, a misé sur une combinaison des offres de privatisation et des ventes privées, ce qui a conduit à l'émergence de plusieurs grandes entreprises dans divers secteurs.

En dépit du fait que les progrès en matière de privatisation ont été perçus comme un signal clair de l'engagement des gouvernements envers les politiques axées sur le marché, les investisseurs dans bon nombre de pays et notamment ceux en voie de développement, hésitent à investir massivement dans le marché boursier. La mise en confiance des investisseurs nécessite un environnement institutionnel propice. Il convient aussi de souligner l'importance pour les gouvernements de bien choisir et respecter la séquence des réformes à entreprendre ; car, si tel n'est pas le cas, le risque que les résultats attendus soient retardés est grand.

Par ailleurs, un marché boursier sous-développé conjugué à un cadre institutionnel peu propice ne facilite pas la mise en œuvre et la réussite des OPA. L'expérience des pays asiatiques est informative à plus d'un égard. Ces pays ont réussi à mettre en place les réformes économiques nécessaires, et se sont par la suite lancés à réformer leur environnement institutionnel, et à réglementer leurs marchés boursiers. Ce n'est que lorsque les conditions nécessaires au lancement de la privatisation étaient réunies, qu'ils ont commencé à vendre des actifs publics. En somme, les conditions économiques, institutionnelles et sociales en Asie ont contribué à faire de la politique de privatisation une réussite. Mais, tel n'était pas le cas de bon nombre de pays d'Amérique Latine, à l'instar du Chili, qui se sont lancés au début des années 1980 dans de vastes programmes de privatisation. D'ailleurs, contrairement aux pays asiatiques, les pays d'Amérique Latine n'ont pas cherché à déréglementer, à modifier les lois relatives à la compétitivité, à renforcer la protection des investisseurs ou à accroître la transparence du fonctionnement des marchés.

S'agissant de la dimension sociale de la privatisation, les résultats empiriques indiquent que l'impact de la privatisation sur l'emploi (ou le chômage) dépend étroitement de la mesure de la privatisation utilisée. De surcroît, cet impact est perçu de manière différente selon les régions. Plus spécifiquement, cette étude a montré que l'accroissement des recettes de la privatisation réduit le chômage, et que l'effet du nombre de privatisations sur le taux de chômage est plutôt différé dans le temps. En moyenne, une augmentation du nombre de privatisations induit une baisse assez significative du taux de chômage dans presque toutes les régions à l'exception de l'Europe.

L'un des résultats les plus importants auquel cette étude a abouti est que la méthode de privatisation semble également constituer un déterminant fondamental de la dynamique de l'emploi. En effet, utiliser la bourse comme un instrument de privatisation s'est révélé être contreproductif en termes d'emploi. Par conséquent, si l'objectif est de réduire le taux de chômage, alors la privatisation par OPA ne semble pas être la bonne méthode à suivre en dépit du fait qu'elle permet de réduire le chômage durant l'année du lancement, mais, celui-ci tend à s'accroître les années suivantes. Un tel résultat est particulièrement vrai pour les pays africains et vient corroborer les résultats avancés par d'autres études. Par exemple, il a été montré qu'après la privatisation, les conditions nécessaires pour améliorer l'efficience et la compétitivité de la firme souvent contraignent les nouveaux propriétaires à licencier davantage. Le problème du sureffectif, souvent considéré comme le dénominateur commun à tous les pays en développement où la majorité des firmes sont spécialisées dans des domaines non techniques, pourrait expliquer dans une large mesure l'augmentation du chômage durant les années suivant l'année d'émission.

Afin d'atténuer les effets négatifs de la privatisation sur l'emploi, l'Etat qui envisage de privatiser devrait mettre en place les relais nécessaires et réaliser une sélection des objectifs. Des politiques d'accompagnement telles que la création de fonds de provisions spéciales visant à dédommager les travailleurs licenciés doivent être utilisées sans pour autant générer trop de pression politique et sans accroitre la dominance fiscale. L'Etat doit mettre en place des mesures d'accompagnement pour réduire autant que possible les coûts (social et politique) associés à la privatisation (mesures de réinsertion, indemnités,…). D'autres mesures d'accompagnement peuvent être envisagées; l'Etat pourraient entreprendre des politiques d'incitations consistant à encourager la participation volontaire au lieu de supprimer des emplois; il peut également créer des fonds spéciaux pour couvrir les coûts liés

aux retraites anticipées ou au transfert des employés des postes redondants; ces fonds devraient être utilisés afin de couvrir les coûts liés à la formation professionnelle et à la mise à niveau technique des travailleurs licenciés qui souhaitent monter leurs propres affaires.

Du côté de l'inégalité, l'analyse a permis de montrer que les recettes de la privatisation contribuent à réduire les inégalités seulement lorsque les conditions institutionnelles sont propices et que le niveau des inégalités est aussi faible que ceux des pays de l'Europe ou de l'Asie. Gérer les recettes de la privatisation de manière efficiente et efficace est une condition nécessaire, mais loin d'être suffisante pour limiter les effets négatifs de la privatisation sur aussi bien les finances publiques que sur la croissance et l'inégalité des revenus.

Les efforts des responsables politiques doivent être recentrés sur la réduction des inégalités car des inégalités larges sont synonymes de taux de pauvreté élevés que la croissance, si élevée soit-elle, se trouve dans l'impossibilité de réduire. Par exemple, une partie des recettes de la privatisation pourrait être consacrée à combattre la pauvreté. Cela permettra justement de réduire les inégalités. Mieux encore, afin de réduire davantage les inégalités, le secteur financier devrait être développé, l'épargne et l'investissement devraient être soutenus, et l'ouverture des échanges devrait être renforcée. Les résultats empiriques présentés dans cette étude indiquent clairement que la qualité des institutions contribue à réduire considérablement l'inégalité, et qu'un degré élevé de corruption contribue à l'accroitre. Par conséquent, afin de tirer le meilleur parti de la privatisation et de réduire les inégalités, il convient d'améliorer la qualité des institutions et d'éradiquer la corruption.

EXECUTIVE SUMMARY

Privatization is considered as one of the main core policies that came to re-enhance government efforts at public sector reforms. Very similar in spirit to the structural adjustment reforms of the 1980s, privatization programs emphasize markets and 'efficiency'. The basic idea that underlines the proponents of privatization is that overstaffed State owned enterprises (SOEs) that are uncompetitive should be restructured under private management. Accordingly, these SOEs will be turned around to become competitive and efficient firms.

Privatization has become recommended by international organizations (chiefly, the World Bank) as well as western experts; As a result, the political debates have re-focused on how to transfer assets to the private sector, which assets should be privatized, who should be allowed to buy assets, and how fast should privatization be implemented. Regrettably, the issue of whether to privatize or not has been marginalized, if not neglected. Again, rather than reassessing policies in the light of their social impacts, many governments have made the transition based on the premise that what was considered to be good macroeconomic policy could only be good for poverty reduction. Potential impacts of privatization on poverty and employment have so far been overlooked in the literature. For instance, studies that attempt to empirically assess the effects of privatization on poverty are very rare, and absent from the World Bank analysis. Likewise, very few are the studies that appraise the impacts of privatization on employment.

The main objectives of this project have been to shed light on these neglected issues, namely the impact of privatization on employment and inequality while accounting for the regional characteristics of privatization. The project seeks also to assess the impact of privatization on stock market development (liquidity and size). Five regions are considered, namely Africa, Asia, Europe, Latin America and Mena. The empirical evidence put forward in this project indicates that the effects of privatization on inequality are rather mixed, and depend on both the region and privatization measures. It has been found that privatization proceeds are harmful to inequality in African and Latin American countries. Their effects on European and Asian countries are instead beneficial. As for privatization effects on inequality in MENA countries, the evidence is inconclusive. Another social impact of privatization

relates to employment. On average, privatization proceeds have been found to lower the unemployment rate in the years that follow privatization. More importantly, privatization proceeds from stock issues seem to decrease employment and their effect is distributed over the few years following the year of privatization.

Based on the main results provided by this empirical study, several policy implications car be put forward. Regarding the impact of privatization on stock market development, our empirical results are explained by the way privatization is actually implemented across countries. For instance, only recently, have MENA and African countries started to privatize on a large scale. Also, most past transactions were direct sales to core investors, so a limited number of privatized firms were actually listed on the stock markets. In contrast, in Asian countries, privatization has started since the 1980s, relatively earlier than in any other region in the sample. Thus, the privatization effects on stock markets have had the time to materialize in this latter region, but not in MENA or African countries.

Our results show a positive impact of privatization progress on stock market development because it signals government commitment towards market oriented policies, and less policy risk. However, we do not find a common systematic effect in all regions suggesting that the way the privatization signal is perceived depends on the geographical region. For instance, it has been perceived as a positive signal in Asia which led to an improvement in market size and liquidity. The reform progress has had no impact on MENA markets. Nor is there an observable effect for Africa and Latin America, irrespective of the measure of stock market development.

Turning to the second aspect of privatization reforms, namely, the method of divestiture (by public share offering or private sale), it is shown that public offerings (SIPs), are in general, insignificantly related to stock market development everywhere except in the Asian bloc. These results can be rationalized as follows: Asian countries have privatized extensively, and heavily relied on public offerings at the time of privatization. Latin America, in contrast, used more often private sales to private investors or a combination of private and public sales for the same firm. In Africa, governments started making efforts to privatize, and put in place some privatization offerings, but the markets were unable to absorb them due to the lack of savings in the hands of investors, and the low initial market liquidity, which did not help to build investors confidence in these markets. The MENA region, in contrast, has

been relying on a combination of privatization offerings and private sales, leading to the listing of several large companies in diverse sectors (finance, airlines, etc.).

The progress in privatization was a clear signal of government commitment towards market oriented policies, but was not perceived as such every where. Thus investors are still reluctant to heavily invest in the stock market. Admittedly, if most privatization transactions are implemented outside the stock market, there can be no positive externalities for the stock market. In addition, building investors' confidence must involve a sound institutional environment, where they have no fear of expropriation. If the sequence of reforms is not optimal, and governments implement privatization, deregulation, and liberalization, all simultaneously, the expected positive outcomes can be delayed. On the other hand, one cannot implement successful privatization offerings if the stock market is underdeveloped, and institutionally unsound. We just have to compare the privatization experience of Asian markets to that from the other regions that we examined. Asian governments put in place liberalization reforms, and then embarked on transition of their institutional environment, and regulation of stock markets. When the conditions needed to launch privatization were in place, they started selling public assets. The economic, institutional and social conditions helped to make their privatization a success story. In Latin America, several countries, such as Chile, embarked on intensive privatization programs in the early 1980s, but the experience was not viable because no changes were introduced in regulation, competitiveness laws, investor protection, and market transparency. As a consequence, the newly privatized firms, had to be re-nationalized, and once the institutional environment became more adequate, the country undertook its privatization program for the second time.

Privatization is a redistributive policy and as such must assure that investors are treated fairly and that transactions are dealt with in all transparency. This requires a sound institutional environment as a pre-condition for success.

As for the social dimension of privatization, the empirical results indicate that the impact of privatization on unemployment depends on the privatization measure used, and is perceived differently across the considered geographical regions. More specifically, we observe that increasing proceeds from privatization reduces unemployment. On another front, the number of privatizations is found to have a delayed effect on employment; the

unemployment rate is found to decrease subsequent to a significant increase in the number of privatizations in almost all the regions but Europe.

The method of privatization seems to be a significant determinant of employment dynamics. Besides, using stock markets as a privatization device is counterproductive in terms of employment. If governments are willing to reduce unemployment, then privatization should initially be implemented without stock issues. Indeed, despite the fact that it reduces unemployment on the year of divestiture, privatization through stock issues tends to increase unemployment the years after. This finding is particularly strong for African countries. Such finding has been again highlighted by other studies. For instance, it has been argued that once privatized, the requirements for efficiency and competitiveness frequently lead the new owners to lay off more workers. The overstaffing of state-owned enterprises, which is relatively common in developing countries where most firms are working in non-technical areas, could explain why unemployment increases only the year of sale.

In order to alleviate the negative impacts of privatization on employment, governments that embark on privatization should implement concomitant policy measures such as making special provisions in privatization plans to compensate laid-off workers. These special provisions should be used without generating excessive political pressure or increasing fiscal dominance. Other such measures could consist in stressing incentives and encouraging voluntary participation instead of job cuts. In addition, governments may create a kind of special fund to cover the costs related to early retirement or transfer costs of employees in redundant positions. Most importantly, these funds should be used to cover the costs related to business training for those employees who have been laid-off and who would prefer to start their own business in the private sector.

As for inequality, privatization proceeds are found to decrease inequality only in environments where institutions are well developed and where the initial level of inequality is relatively low, as Europe or Asia. Managing privatization proceeds in an efficient and effective way is a necessary, albeit far from being sufficient, condition to limit the negative effects of privatization on public finance, and in turn on growth and income inequality. Efforts should be made in order to reduce inequality because high inequality is synonym of high poverty rates, and this latter cannot be reduced significantly even at high economic growth rates. In order for growth to reduce poverty, inequality should also be reduced as

much as possible. For instance, and as stressed above, a portion of privatization receipts (or funds) might be spent on pro-poor plans, which will help reduce inequality. Better still, to further reduce inequality, financial sector development should be prioritized, saving and investment should be increased, trade openness should be reinforced. Again, the empirical evidence presented in this project indicates clearly that on the one hand the institutional quality reduces significantly inequality, but on the other hand high levels of corruption increase it. Therefore, in order to get the most out of privatization and in order to reduce inequality further, policymakers should adopt a corporate governance perspective that permits to improve institutional quality and eradicate corruption.

Far from recommending the abandon or/and reverse of privatization process, this project recommends that privatization process should be carried out circumspectly and correctly. More specifically, decisions to privatize should be assessed soundly, and their expected outcome and impacts on inequality and employment should be evaluated beforehand. For instance, privatization should be implemented while accounting for local conditions, taking advantage of the domestic comparative advantages, and elaborating mechanisms that ensure that the poor have access to affordable essential services. Better still, efforts to promote competition and regulatory frameworks should deepen, and transparency in sales processes has to be enforced. Policymakers should be borne in mind that what is considered to be a good macroeconomic policy will not systematically alleviate poverty and reduce income inequality.

Even if privatization enhances enterprise efficiency as it has been argued in many empirical studies, the bulk of its benefits should channel to shareholders, managers, domestic or foreign investors and those connected to the political elite. The experience has shown that privatization costs are instead borne by many stakeholders including taxpayers, consumers, and workers, thus reducing the overall welfare. Worse, the perceived corruption as well as the lack of transparency in privatization transactions in some countries have reduced the expected gains and increased governance problems. Thus, if privatization is applied without proper regard to a country's economic and social conditions, it will lead to more severe social conditions.

Most of the theoretical and the empirical literature on the impact of divestiture has focused on microeconomic evidence, a small number of studies look at privatization as a

broad policy reform that may act as a shock on output levels. But, very few studies have tried to assess the social impact of privatization. Although many studies have reported that the privatization record to date is in general positive, privatization process, chiefly in developing countries, has nonetheless often been perceived as undesirable and often gave rise to social trouble and unrest, primarily because privatization is seen as a redistributive policy that favors the richest. Privatizing utility more specifically is often criticized as it is perceived to favor the richest, the foreign and those more corrupt. This criticism is nourished by the perception that workers and customers pay for this reform by losing their jobs and by facing increased prices. The negative perception of the reform is highest when it involves the sale of infrastructure and strategic firms, considered as social-service providers. It is thus imperative that policy makers work on gaining the confidence of investors and citizens alike.

PREAMBLE

During the last two decades, many countries around the world have witnessed an intensive wave of privatizations. For instance, during the 1990s Latin America experienced a wave of privatizations, which were an integral part of stabilization programs and a general reordering of the role of States in the regional economy. Likewise, privatization has started mainly in UK during the 1950s with the privatization of the British steel industry and culminated during the 1990s with the privatization of British Rail. West Germany's government embarked also on large-scale privatization. Privatization of state-owned enterprises (SOEs) in Eastern and Central Europe and the former Soviet Union was undertaken in the 1990s with the help of the World Bank, and other governmental and nongovernmental organizations.

Privatization is so far considered as one of the main core policies that came to re-enhance government efforts at public sector reforms. Very similar in the sprit to the structural adjustment reforms of the 1980s, privatization programs emphasize markets and 'efficiency'. The basic idea that underlines the proponents of privatization philosophy is that overstaffed and SOEs that are uncompetitive should disappear. According to them, these SOEs should then be replaced by competitive firms often in the same product lines, and rarely aligned with the countries' revealed comparative advantage.

Consequently, privatization has become recommended by international organizations (chiefly, the World Bank) as well as western experts; and, the political debates have re-focused on how to transfer assets to the private sector, which assets should be privatized, who should be allowed to obtain assets, and how fast should privatization take place. Regrettably, the issue of whether to privatize or not has been marginalized, if not neglected. Again, rather than reassessing policies in the light of their social impacts, many have made a seamless transition presumably on the basis that what was considered to be good macroeconomic policy will also be good for poverty reduction. Potential impacts of privatization on poverty and employment have so far been overlooked. For instance, studies that attempt to empirically assess the effects of privatization on poverty are lacking in general, and absent from the World Bank analysis. Likewise, very few are the studies that appraise the impacts of privatization on employment.

This project adds a new dimension to the debate on the social impacts of privatization by focusing on the effects on employment and inequality while accounting for the regional characteristics of privatization.

Plan of the Report

1. **Introduction**

2. **Privatization: An overview**
   2.1.   Defining privatization
   2.2.   What drives privatization?
   2.3.   Methods of privatization
   2.4.   Privatization: The pros and the cons
   2.5.   Privatization around the world: Data and stylized facts
   2.6.   Privatization in MENA countries

3. **The impacts of privatization on stock market development**
   3.1.   Theoretical and empirical background
       3.1.1.   Literature review
       a)   Microeconomic effect of privatization
       b)   Impact on macroeconomic growth
       c)   Impact on stock market development
       3.1.2.   Main hypotheses to be tested
   3.2.   Econometric modeling
       3.2.1.   Sample and data description
       3.2.2.   Descriptive statistics
       3.2.3.   The model
   3.3.   Empirical findings and comments

4. **The impacts of privatization on inequality and employment**
   4.1.   Theoretical and empirical background
       4.1.1.   Literature review
       4.1.2.   Main hypotheses to be tested
   4.2.   Econometric modeling
       4.2.1.   Sample and data description
       4.2.2.   Descriptive statistics
       4.2.3.   The model
   4.3.   Empirical findings and comments

5. **The policy implications of the main findings across the different samples**

6. **Concluding remarks**

1. Introduction

Nearly all countries embraced privatization, generating more than US $145 billion of revenue in 1999 alone. Between 2000 and 2007, close to 2000 formerly state-owned enterprises (SOEs) have been privatized in developing and transition economies alone, generating about $414.6 billion in sales proceeds.[1] At first sight, the privatization movement seems global. However, its distribution across countries is uneven. In fact, whether we compare privatization proceeds, the timing of privatization or the extent of government divestiture, we find significant differences across countries and regions. For instance, the most significant (and earliest) privatizations (in terms of proceeds) are those recorded in countries from the Latin American and the Caribbean countries. According to the World Bank (2002), these regions raised $177.84 billion from privatization between 1990 and 1999, compared to $23.51 billion in East Asia and the Pacific, $11.85 billion in South Asia, and $8.26 billion in Sub-Saharan Africa. Similarly, while some countries adopted privatization as early as the eighties, others subscribed to the policy only recently. The extent of government divestiture, measured by the stake sold during the transfer of ownership, also differs across countries and across regions. Likewise, some countries favored share issue privatizations (SIPs) while others privileged private sales to strategic investors. These observations raise some fundamental questions: For example, what could be the impulse behind privatization? What was the impact of privatization on stock market development? What was the social impact of the reform? By studying these issues, we can make a step towards understanding the link between policy choices and the social and economic structures in which they are embedded.

Most of the theoretical and the empirical literature on the impact of divestitures has focused on microeconomic evidence, a small number of studies look at privatization as a broad policy reform that may act as a shock on output levels (Gylfason, 1998; Mackenzie, 1998; Chisari et al., 1999; Barnett, 2000; Schipke, 2001; Bennett et al., 2004). But, very few studies have sought to assess the social impact of privatization. Although many studies have reported that privatization record is in general positive,[2] privatization process chiefly in

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[1] Megginson (2010) describes the role privatization has played in "increasing the total market capitalization of global stock exchanges from $3.2 trillion in 1983 to over $62 trillion in 2007".

[2] For instance, Boubakri and Cosset (1998), D'Souza and Megginson (1999), Megginson and Netter (2001) underline the positive effects of privatization at the firm level.

developing countries has nonetheless often been perceived as undesirable and often gave rise to social trouble and unrest, which is primarily because privatization is seen as a redistributive policy that favors the richest especially when it comes to the privatization of utilities. Privatizing utility is criticized as it is perceived to favor the richest, the foreign and those more corrupt. This criticism is nourished by the perception that workers and customers pay for this reform by losing their jobs and by facing increased prices. Privatization is thus seen as favoring and increasing poverty and inequality. These criticisms have been more acute in infrastructure and utilities' privatizations (water, electricity, education, health…) in general. The negative perception of the reform is highest when it involves the sale of infrastructure and strategic firms, considered as social-service providers.

Privatization programs have been undertaken in many countries across the world, and generally fall into three major groups. The first is privatization programs conducted by transition economies in Central and Eastern Europe after 1989 in the process of instituting a market economy. The second is privatization programs carried out in developing countries under the influence of international financial institutions such as the World Bank and the International Monetary Fund (IMF). The third is privatization programs carried out by developed country governments, the most comprehensive probably being those of New Zealand and the United Kingdom (UK) in the 1980s and 1990s.

At the heart of the popular perception of privatization lies the anticipated negative spillover effect of the reform on the distribution of wealth, income and political power. In developing countries, the institutional environment usually lacks the enforceability of property rights, often suffers from policy deficiencies (e.g., distortionary tax systems, labor market rigidities), outright corruption, and from the protected monopolies that SOEs often represent. This environment nourishes the negative perception of privatizations.

Typically, such privatizations are often regarded as a sensitive issue, as they involve the loss of the government's ability to use these industries for political purposes, including maximizing jobs and pricing below marginal costs. The involvement of foreign buyers in the process adds to the controversy since foreign participation as a share of total proceeds in developing countries has mostly been the result of sales in strategic sectors such as oil and gas, telecommunications and banking (Kikeri and Nellis, 2002).

The literature on the impact of privatization on inequality and poverty fails however to *provide support to these claims*. An important contribution to the literature came from the Galal et al.'s (1994) study on the welfare effects of privatization in four countries. The authors show that welfare was improved in three out of four cases, and workers did not overall loose from the process. Although several studies, as discussed above, show that privatization is often preceded by restructuring that mainly affect employees, the quantitative effects of privatization have not, or rarely, been assessed. One notable exception is the recent paper by McKenzie and Mookherjee (2005) in which the authors examine the distributional impact of the change in ownership for infrastructure projects in Latin American countries. They show that although privatization led to an increase in the country unemployment level, it had very little impact on income inequality measured by the Gini coefficients, compared before to after privatization. These results may however pertain only to the experience of Latin American countries. Privatization has a dynamic of its own from one region to another and from one country to another, as the economic, institutional and political environments which condition privatization differ. There are little indications in the literature as to whether this evidence is transferable elsewhere.

We focus in this report on the Middle East and the North African Region (MENA). Our interest stems from several observations: Stock markets in this region are embryonic and generally lag behind other emerging markets in terms of level of development indicators. It is therefore important to assess whether privatization indeed delivered its promises, and contributed to the recent growth of some markets across regions. Second, governments in emerging markets have implemented privatization with a varying speed and commitment. This provides us with a perfect laboratory to draw some policy implications as to the best privatization strategy to adopt in order to realize the positive outcomes that one would theoretically expect. Additionally, the MENA region, which is becoming actively involved in privatization, remains an under researched area. Few existing studies focus on the micro-effects of privatization in a single-country study (mostly on Egyptian firms), and only one previous attempt has been made to analyze the micro-impact of privatization in a MENA cross-country setting (Ben Naceur et al., 2007a).

In what follows, we first present an overview of privatization and discuss its theoretical rationale, its pros and cons, and add a description of the phenomenon in emerging markets and in the MENA region. The second part of the report addresses the first question on the

impact of privatization on stock market development, while the third examines the social impact of the reform.

2. Privatization: An overview

Privatization which is the transfer of control rights from the public to the private sector constitutes a fundamental structural change in the ownership of State owned firms. As such, it drives a drastic change in the economic objectives of the firm (from politically and socially-oriented to profit oriented). It also leads to a fundamental change in the incentives of managers/owners.

Under State ownership, an industry or a company are run for political goals rather than economic ones. Privately held companies can more easily raise capital in the financial markets, and make their investment decisions based on market interest rates. Poorly managed state companies are not subject to the same discipline as private companies, which could go bankrupt, may have their management removed, or could be taken over by competitors. Private companies make a profit by enticing consumers to buy their products rather than their competitors'. The basic economic argument given for privatization is that governments have few incentives to ensure that the enterprises they own are well run. As governments may borrow money more cheaply from the debt markets than private enterprises, they will squeeze out more efficient private companies through this misallocation of resources. Where governments lack, private owners do have: profit motive. Ideally, privatization leads to the establishment of social, organizational and legal infrastructures and institutions that are essential for an effective market economy. Privatizing a non-profitable (or severe loss-making) company which was state-owned would shift the burden of financing off taxpayers, as well as freeing some national budget resources which may be subsequently used for something else.

Privatization was first introduced in developed countries, precisely in UK the early 1980s. It has also been implemented as early as the mid seventies in Chile. Since then privatization has spread worldwide, first in industrialized economies and then to Asia, Latin America, Africa and Central and Eastern Europe. It has been adopted by governments from different political systems, with different political orientations and institutional backgrounds (Filipovic, 2005). During the last two decades, more than 100 countries privatized some or

most of their SOEs (Megginson and Netter, 2001). A broad range of objectives have been put forward by governments to justify privatization, including, among others, to increase government revenues and reduce budget deficits (by reducing the subsidies and eliminating the soft budget constraint of SOEs), to promote foreign direct investment and develop domestic capital markets (by encouraging popular capitalism), to improve the efficiency of SOEs and to contribute to the economic growth of the country. These objectives have varied across countries.

In practice, privatization transactions have increased in number and amount during the last fifteen years. In a recent update, Kikeri and Phipps (2008) document that in 2007, 51 developing countries carried out 236 privatization transactions, valued at US $132.6 billion. The value of privatization transactions increased by 26% compared to the previous year, and 150% compared to 2005. These figures suggest an increasing trend towards privatization even after more than two decades since the reform was put on every country's development agenda. Most transactions were partial privatizations through issues on the stock market (SIPs) which have been gaining momentum over the last decade, generally allowing governments to create popular capitalism and boost stock market development. Kikeri and Phipps (2008) note that "state-owned companies, though just 15 percent of all privatization transactions in developing countries, raised 75 percent of total privatization value — US $99 billion, or 37 percent of worldwide IPO value in 2007" pointing to the importance of such transactions. In contrast, the authors note a decrease in non IPO privatization transactions that raised about US $34 billion (20% lower than in 2006).

In the MENA region, according to the World Bank, the number of privatization transactions fell from 33 in 2006 to 20 in 2007. The total value also dropped by close to 70% compared to the previous year. Iraq and Libya are new comers among new privatizing countries in the region. Continued efforts are observed in Egypt, Jordan, and Morocco. We however note a slower pace in privatization of SOEs in Egypt, mainly due to the very high public opposition to the reform which put constraints on the government.

2.1. Defining privatization

Privatization could be defined as being "any process aimed at shifting functions and responsibilities, in whole or in part, from the government to the private sector". In its most

traditional form, privatization refers to "public sector divestiture of assets and service responsibilities, allowing the private sector to take over all aspects of service and service delivery" (Johnson and Walzer, 2000). Privatization is the abolition of barriers to private sectors' provision of services or the infrastructure necessary for their delivery (Shehadi, 2002). According to conventional wisdom, governments seek to implement privatization reforms in order to achieve at least the following goals. First, privatization is thought to bring down national budget deficits and the stock of national debt. Indeed, the privatization of SOEs implies a reduction in government expenditure in the form of subsidies. Moreover, if after privatization former SOEs become and remain more profitable, they can also help increase tax revenues. Further, experience has shown that privatization revenues do not lead to an increase in government spending, because they are considered a once and for all yield and are earmarked to reduce the stock of national debt. Second, governments pursue privatization policies in order to foster financial market development. Current experience is consistent with a positive impact of privatization policies on financial market development. Empirical analyses show that privatization has contributed to the growth of stock market capitalization and trading all over the World (Megginson and Netter, 2001). Third, government may wish to undertake privatization actions to increase efficiency which may seem a bit controversial. Conventional wisdom assumes that privatization policies contribute to increase efficiency given that a huge amount of resources is moved from government control to market allocation. However, such a 'popular' belief may be due to ideological faith in the virtues of economic liberalism rather than to a proper assessment of the impact of the firm's ownership on productive and allocative efficiency.

Privatization is the economic process of transferring property from public ownership to private ownership. In theory, privatization helps establish a "free market" as well as foster capitalist competition and popular capitalism. Privatization is also frequently defined as the transfer of control rights from the public to the private sector. Recently, Filipovic (2005) defines privatization as "a method of reallocating assets and functions from the public sector to the private sector".

2.2. What drives privatization?

Privatization transactions are driven mainly by the fiscal problems experienced by governments and by the rationale that the expansion of the private sector is a driver of any

development strategy (Bortolotti et al., 2001). Although the literature provides evidence on the general benefits of the reform on both the microeconomic and the macroeconomic levels, one consensus emerges as to the importance of the institutional framework and institutional conditions for a successful privatization program (Bortolotti et al., 2001).

The theoretical literature on privatization rationalizes instead the need to switch to private ownership by putting forward problems such as the asymmetric information, incomplete contracting, and soft budget constraints that characterize state ownership (Kay and Thompson, 1986; Vickers and Yarrow, 1989; Perotti and Guney, 1993; Willig, 1993; McLindon, 1996; Shleifer and Vishny, 1997). By switching to private ownership, privatization is expected to improve the resource allocation in these firms and by introducing new incentives for managers to maximize profits and performance and new capital by new owners (Megginson et al., 1994; Boubakri and Cosset, 1998; D'Souza and Megginson, 1999, La Porta and López-de-Silanes, 1999).

The macroeconomic impact of privatization is expected to materialize in lower fiscal deficits, and more developed financial sector. The impact of privatization on welfare effects in rare, and a notable exception is the country case studies conducted by Galal et al. (1994). The authors find significant welfare increases in the four countries included in the study, namely UK, Chile, Malaysia, and Mexico, for privatization transactions that took place between 1983 and 1991. Two main forces have driven this: first, the fiscal problems that have forced governments to divest; and second, the fact that the development of a vigorous private entrepreneurial sector has been shown to be a key element of successful/sustainable development policy.

It worth reminding that Public Enterprises (PEs) have been created especially for achieving social objectives such as social justices by providing goods and services with low prices, reducing unemployment by creating jobs, and backing up governments by investing and boosting economic growth. In most countries, some PEs have been profitable but others have recorded heavy losses, weighted heavily in the State budget and absorbed huge amounts of domestic credits that would have been better invested in the economy. For instance, during the period [1989-1991], the losses of Argentina PEs' reached 9% of the GDP. Subsidies and government transfers to the 14 largest PEs in Argentina reached 2% of the GDP. In the same vein, government subsidies to PEs were equivalent to 3% of the GDP in Mexico in 1982, 4%

in Turkey in 1990, and 9% in Poland in 1989. According to Kikeri et al. (1992), PEs in Guinea have absorbed almost 90% of domestic credit banks whereas their contribution to the GDP did not exceed 25%. Such situation has led many countries to undertake public sector restructuring programs without ownership changing. Such reforms have been suggested by the World Bank to most borrower countries. Among these reforms, one may mention the removal of PEs' automatic access to credits and competition enhancement. Unfortunately, the outcome of these reforms was not satisfactory.

Nowadays, governments everywhere in developed as well as developing countries recognize that privatization is an essential instrument for economic development. In developing countries, privatization is often considered as an indispensable element of structural adjustment programs fostered by international organizations such as the World Bank or the IMF.

2.3. Methods of privatization

In general, the literature on privatization has dedicated relatively less attention to the choice of privatization method, although it is expected to play a significant role in the process. It is conjectured to be determined among other things by the objectives of the government, and by external constraints related to the institutional and political environment. It is also likely to depend on the industry and market structure of the firm. In a recent study, Boubakri et al. (2010) show that the likelihood of privatizing through share issues is determined by the political orientation of the government, and the extent of checks and balances, political stability, in addition to the level of investor protection prevailing in the country.

It is often argued that the method chosen by the privatizing authority determines to a great extent the likelihood of achieving the pre-established goals. There are many methods for privatization or Private Participation in Infrastructure (PPI), but there is not a single option that fits all. One of the most important determinants of the transaction success is the selection of the strategy of privatization that has to be made with respect to institutional constraints (i.e., SOE attributes), the government's policy goals, and the market-related constraints. The method of privatization should carefully take into consideration the concerns of investors and consumers to optimize the benefits of privatization. Obviously, the choice

among PPI options results in a different distribution of responsibilities between the private and the public sectors. However, irrespective of the option for PPI, the state will be responsible for subsequent regulation or contract monitoring. Below, we review the most commonly used privatization methods: mass privatization, direct sales to strategic investors, public offerings of shares, mixed sales, and concessions. The last method, concessions, is recommended for sectors with natural monopoly characteristics with large sunk costs and network externalities. In competitive sectors, the more favorable and cost-effective methods are public offerings of shares or mixed sales. Even in the case of direct sales or concessions, competitive bidding is recommended over closed, negotiated sales.

Privatization is implemented through different methods. The first one is SIPs; it consists in public offerings of shares in the market. A SIP thereby is defined as a public offering of common stock by a firm with state ownership (Dewenter and Malatesta, 1997; Jones et al., 1999). The second method is called the *Asset Sale Privatization* (ASP); it consists in selling the entire firm or part of it to a strategic investor, usually by auction or using *Treuhand* model. The third method is known under the name of *Voucher Privatization* (VP); it consists in distributing shares of ownership to all citizens, usually for free or at a very low price. SIP is the most common and the most used method of privatization. In what follows, we describe all possible ways to privatize keeping in mind that the three methods discussed above are the most common.

__Asset sale or long-term lease__: The government sells assets or leases them for a long period to private firms with the aim of turning physical capital to financial capital. These assets encompass airports, gas utilities or real estate. In other words, asset sale is the transfer of ownership of government assets, commercial-type enterprises, or functions to the private sector. In general, the government has no role in financial support, management, or oversight of a sold asset. However, if the asset is sold to a company in an industry with monopolistic characteristics, the government may regulate certain aspect of business, such as utility rates. There are two other forms that are counted as subsets of asset sale. These are *Sale-Leaseback* and *Employee buyout*. Sale-Leaseback, as its name implies, means that a government agency sells the asset to a private sector and then leases it back. But in Employee buyout an exiting public manager and employee take the public unit privately, typically purchasing the company through an employee stock ownership program (ESOP) or employee stock association (ESA).

Contracting out (outsourcing): Contracting out is the selecting and hiring of private firms or non-profit organizations to provide goods or services for the government. In this form of privatization, government remains financier and it can select or reject the private firms because of their quality, performance, economic considerations, etc., but they contract and act according to it (Johnson and Walzer, 2000). Outsourcing is defined as the contracting of one or more of a company's business processes to an outside service provider to help increase value, by primarily reducing operating cost and focusing on core competencies. Outsourcing, according to Coopers & Lybrand's Breakpoint Business Process Redesign, is "the practice of contracting out for services once run by an organization's employees and managers" (Kulkarni and Sharma, 2004).

Corporatization: Government corporations are separate entities that conduct revenue-producing commercial-type activities. They are often freed from certain governmental restrictions related to personnel and procurement.

Franchise: Governments may give an exclusive right to provide a service within a specified geographical area. Franchise is divided into two subsets: (i) _Franchising of external services._ It is the same as the statement above. (ii) _Franchising of internal services._ Under the franchising of internal services, government agencies provide administrative services to other government agencies on a reimbursable basis. In this way, new opportunities are created to obtain administrative services from another governmental entity instead of providing them for themselves.

Internal markets: In this case, departments are allowed to purchase support services from in-house provider or outside supplier. In-house provider needs to be an independent unit to compete with outside supplier. Some advantages of this system are bringing market forces to bear within an organization. Internal customer can reject the service of in-house provider if they can't satisfy their expectations.

Joint venture: In order to control asset management and service delivery, government and private sectors join together and share their responsibilities for policy and management decision. In this case, the asset may be owned by the government or by a new private firm. Also, operation and service delivery may be contracted to the private partner or it may be

jointly provided (Johnson and Walzer, 2000). This state can be accounted as one form of public-private partnership.

Management contracts: In this type of privatization, only the operation of a facility is contracted out to a private sector. This can be used for assets such as airports, wastewater plants, arenas, cinemas (Johnson and Walzer, 2000).

Private infrastructure: The private sector builds finances and operates public infrastructure such as airports and roads, recovering costs through user charges. Two general techniques are used in this case: (i) *Build-Operate-Transfer* (BOT). The private sector does every work for the related project but at the end of complication period, ownership reverts to the government. It is usually applied for public constructions. (ii) *Build-Own-Operate* (BOO). The private sector is the owner, too.

Partnership: Partnership usually provides opportunities to improve access to new technologies and tools, new research expertise and infrastructure, private equity markets, new product markets, new customers and new marketing and distribution networks. Thus, the *synergies* through knowledge sharing, joint learning, scale economies, resource pooling and cost sharing can be obtained. Partnership can help to maximize the efficiency and effectiveness of sustainable development oriented *supply chain management* strategies. Examples of partnerships are discussed below: (i) Partnerships among groups of companies working with the same suppliers enable partners to develop common standards and share the costs of monitoring and verification (e.g., the work done by the Hudson Bay Company with other department store chains internationally). (ii) Partnerships which build private sector capacity in developing countries enable companies to start sourcing products and services from local suppliers, thereby increasing their economic contribution to host countries and reducing operating costs (e.g., the work done by Chevron Texaco and UNDP in Kazakhstan and Angola).

Public-private partnership: Public-private partnership is a contraction conformed between public and private sectors that can include a variety of activities i.e., development, financing, ownership, and operation of a public facility or service. It is usually related to infrastructure projects or facilities. Partnership consists in dividing responsibilities and sharing income resulting from the partnership in direct proportion to the partner's investment.

From this partnership, the public sector generates new revenue and enhances its service delivery capacity without having to pay the private-sector partner (Johnson and Walzer, 2000). In this way, the roles of *public partners* can be defined in terms of core competencies (including identification of public needs, arbitrage between needs and managing contracts for maximal social value creation), time horizon and incentives. Also, there are some roles for *private partners* in terms of core competencies (including technology use and development, economies of scale and scope, development and export of know-how) and reputation building (dynamic incentives and opportunism).

Anchor investor sale: There is no clear definition of anchor investor sales. So, we explain it through an example. In Egypt, the only private company (*Cement Misr*) tends to buy Abu Zaabal for Fertilizers, but this company was allowed lease Abu Zaabal for a period of 3 years before buying. *Cement Misr* is committed to paying LE 182.8 million for the company under an installment plan against collateral over a 3-year period. This was an anchor investor sale with a value of LE 128.8 million.

Performance-based contract: Without considering the *Performance* parameter and trying to improve it, all of the outsourcing, contracting, privatizing and partnering won't work effectively. Some of the most important motivators for outsourcing projects are flexibility and speed, cost containment/certainty, improved quality, access to personnel or skills, innovation and enhancing focus on core mission. The following considerations will result in a *"Performance-based"* contract:

1. Soliciting bids on the basis of what results you want to achieve rather than what activities you want to conduct.
2. Defining clear performance expectations and measures (baseline vs. expected results).
3. Clearly defining due dates and milestones.
4. Providing incentives for performance.
5. Granting flexibility in exchange for accountability for results.
6. Monitoring to ensure that performance is being achieved.

There are critical factors for *managing* a performance-based contract successfully including: (i) Monitoring performance with regular reporting, (ii) Adjusting (identifying

changes in external factors that will impact performance; devising corrective action plans for deviations; benchmarking and comparing; analyzing for next steps; Revising performance targets to continue the push for gains), (iii) Providing comparative performance data to contractors (create a "race to the top" culture), and (iv) Communicating and rewarding success.[3]

Self-Help: Self-Help case generally occurs in community groups or neighborhood organizations to take over a service or government asset such as a local park. The main difference is that the service providers are the service users too. Service providers are non-profit organizations. Such cases are suitable for zoos, museums, fairs, remote parks (Johnson and Walzer, 2000).

Volunteers: Volunteers are used to provide all or part of a government service and are conducted through a government volunteer program or non-profit organization and it can be a kind of outsourcing (Johnson and Walzer, 2000).

Vouchers: Government pays for the services. These payments subsidize the consumer of the service, yet services are provided by the private sector.

2.4. Privatization: The Pros and Cons

State owned firms have been shown to be less efficient than comparable private firms (Boardman and Vining, 1989). Additionally, Shleifer and Vishny (1997) argue that state-owned firms are characterized by acute agency conflicts as the firms are public goods (owned by the people) and are run by bureaucrats whose objective function is not to maximize profits, but rather to extract political rent (ensure voters' support) by maximizing employment and social welfare. Governments have thus no incentives to ensure that the firms under their control are well run. Private owners, however, will tend to maximize profits and, as a consequence, have strong incentives to closely monitor the firm. As a result, one expects the privatized firm to become more efficient, and on a larger scale, the whole economy to benefit from privatization.

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[3] See http://www.knownet.hhs.gov.

Several arguments are put forward to justify privatization. Advocates of privatization argue that governments run businesses poorly for the following reasons: First, their objectives are political in nature and are not profit oriented. Second, SOE management by bureaucrats is very often accompanied by high levels of expropriation, government predation and corruption. Third, management is often dictated by social goals (including maximizing employment, keeping inefficient firms in politically sensitive areas...). Fourth, the implicit guarantee that the government will bail out the SOE in case of financial distress endows the firm with a non binding financial constraint which does not provide any incentives to efficiently run the firm. There is hence a negative externality on the other existing firms for which less money is available. Finally, the interference of politicians in the management of the firm leads to acute agency conflicts.

By transferring ownership to the private sector, the structure of incentives will change, and newly privatized firms will be able to raise funds through the capital markets, thus submitting themselves to the scrutiny of stock market participants. In addition, privatization typically involves foreign investors which bring expertise and the much needed capital to overturn the companies.

On the other hand, those opposing privatization usually sustain that the transfer of ownership is not desirable for the following reasons: First, once they are privatized and become private, the firms are out of the control of the public. Second, the private profits are not a common good and cannot be shared with the public. Third, and most importantly, privatization of utilities is particularly sensitive as the utilities are likely to maximize profits rather than social goals, and the public generally expects higher prices after privatization, and extensive lay-offs. This explains why privatization implementation is particularly politically sensitive. In many countries, most recently Egypt, discussions on privatization has led to social unrest, and fierce public opposition. The experiences of Russia, Mexico and transition economies, notably East Germany, also witnessed fierce opposition following extensive lay-offs in newly privatized firms. When the firms are natural monopolies, consumers expect to be worse off, so the privatization of utilities and telecommunication companies have also created an anti-privatization sentiment in many countries. Likewise, in countries such as Argentina, profitable firms were put up for sale, which had a negative effect on government revenues and hence on the expenses in social programs related to health and education. A dramatic drop in the offer of public services followed, fuelling negative sentiments towards

privatization. Another argument is that privatization is viewed as a potential factor to increase corruption. The example of Russia where the crown jewels were sold to private oligarchs have reinforced this perception that privatization is in fact a transfer of public goods to few privileged connected people.

2.5. Privatization around the world: Data and stylized facts

The World Bank's extensive privatization transactions database (8,349 observations) and the Privatization Barometer database (1,347 observations) show a total of close to 10,000 for 115 privatizing countries. Several insights emerge from our examination of this exhaustive database. Most of the privatizing countries (82) had their first privatization experience during the 1990s, consistent with overall intense privatization activity observed during this period. The total number of transactions amounts to 7,238 involving 6,739 privatized firms, most of them being in Europe and Central Asia (63%), followed by Latin America and the Caribbean (16%), and Sub-Saharan Africa (10%). Transitions economies, through mass privatization programs, along with Mexico and Brazil are among the world's most active privatizers over this period.

A look at the percentage of capital privatized reveals that the average across all countries in the sample is 66%. Thus, on average, governments across the world relinquished the control of SOEs. The means of the percentage sold are statistically and significantly different between regions, the highest value being in Latin America and the Caribbean (79%), followed by Sub-Saharan Africa (72%) and Europe and Central Asia (70%), and the lowest being in MENA region (56%) and South Asia (57%).

Also, the distribution of privatization proceeds shows several interesting facts: First, the average privatization proceeds per deal across all countries is $76.97 million, with the highest values observed primarily in Western European countries, such as Italy ($1057.71 million), Denmark ($860.35 million), France ($677.51 million), and Spain ($635.39 million). Second, the total proceeds as a percentage of GDP is significantly higher in Europe and Central Asia (2.90%) and in Latin America and the Caribbean (1.95%) and lowest in South Asia (0.51%) and MENA (0.82%). Since proceeds to GDP usually measure the volume of privatization, we can conclude based on these figures that Europe and Central Asia, as well as Latin America and the Caribbean achieved higher volumes than Europe and central Asia, Africa and South

Asia. Third, the average percentage of foreign proceeds (of total proceeds) across all countries is 27%, with the highest values in East Asia and Pacific (32.4%) and in Sub-Saharan Africa (31.4%), and the lowest in South Asia (15.61%). These figures suggest that foreign participation in privatizations was highest in Europe and central Asia and lowest in South Asia. The importance of foreign involvement in privatizations is likely to exacerbate the controversy surrounding the reform.

Overall, the geographical distribution of privatization shows significant differences across regions and countries in terms of privatization activity. By far, along a variety of dimensions, the most active privatizers are countries from Europe and Central Asia and Latin America and the Caribbean. Countries from these two regions have been using privatization as a tool for economic reform, mobilization of foreign investment and development of their national stock markets. In contrast, countries from MENA region and South Asia are less prone to actively embark in the process as they privatized only a small fraction of their large public sector. This might suggest less commitment to economic reforms, and especially a lack of institutional infrastructure for privatization.

As for the distribution of privatizations by major industry classification, privatization has been widespread in a number of industries, ranging from small and medium-sized firms in competitive sectors to large regulated infrastructure, financial and energy firms. The percentage of capital privatized is highest in agro-industry (75%) and transportation (72%), and lowest in telecom (40%) and energy (42%). The mean of capital sold is significantly lower in strategic industries — energy, telecom, utility — compared to non-strategic industries. The telecom and utility sectors, and more generally strategic industries, show a significantly higher average privatization proceeds per deal and account for the highest share of foreign proceeds.

Privatizations exclusively allocated to local investors dominate the total privatization transactions (63%) consistent with Jones et al. (1999) who claim that political considerations are usually involved in designing privatization programs to favor domestic investors. Privatizations entirely devoted to foreign investors are nontrivial, and account for 23% of total transactions. Privatization via direct sales accounts for the overwhelming majority of all transactions (65%) with complete information on the divestiture method consistent with Megginson et al. (2004). Specifically, three major findings emerge. First, the average direct

sale privatizes 75% of the former SOEs compared to 53% in the average SIP. Second, the average SIP involves remarkably larger proceeds per deal compared to the average direct sale. Third, the foreign proceeds as percentage of total proceeds are significantly higher for the average private sale. Thus foreign investors are more extensively involved in private sales. Overall, these figures show that privatization progress and design have been remarkably different across countries, whether classified according to the level of economic development or indebtedness, or with respect to the prevailing legal system.

2.6. Privatization in MENA countries

According to the World Bank recently updated privatization database, the MENA region raised $25 billion (9 percent of total value from 87 transactions in the developing world). Egypt led with over $10 billion, largely from transactions in the finance and competitive sectors. 2006 was a peak year for the region, accounting for nearly half of total value since 2000. Telecommunications dominated the region during the latest survey period of [2000-2006], accounting for 60 percent of total regional values (see Table 1 below).

Table 1- Privatization in MENA countries (in $ million)

	2000	2001	2002	2003	2004	2005	2006	2007
Algeria	7	369		360	421	223		161
Egypt	308	207			52	2,171	7,582	310
Iran						350		
Iraq								1,250
Jordan	568	20	112	173	2	55	319	556
Lebanon						236		
Lybia								205
Morocco	2,110			1,551	2,616	147	650	847
Oman						852		
Syria		70						
Tunisia	230		227		247	121	2,282	61
Yemen	20							
MENA	3,243	666	339	2,084	3,338	4,155	11,047	3,390

Source: World Bank.

According to the available database, we observe in Table 2 that MENA countries also embarked on privatization process in the 1990s with some transactions recorded for Tunisia and Turkey since the year 1988. We note also that such process seems to be punctual in the two Gulf countries Bahrain and Kuwait covering a short period while the process continues until now in all the other considered countries.

Table 2- Some indicators of privatization in MENA countries

Countries	Total number of privatizations	Total number of privatizations per year	Proceeds/GDP	SIP proceeds/Total proceeds
Bahrain [1993-1999]	6	0.85	0.000875	0.285
Egypt [1993-2007]	176	11.73	0.00946	0.429
Jordan [1995-2002]	20	1.42	0.014	0.449
Kuwait [1994-1998]	19	3.8	0.0107	0.456
Morocco [1993-2008]	93	5.81	0.0204	0.33
Tunisia [1988-2008]	89	4.23	0.00627	0.298
Turkey [1988-2008]	293	13.95	0.00453	0.388
MENA		7.03	0.00962	0.292

This table presents the yearly means of total number of transactions in MENA countries relating to each time span for each country as well as the average share of total proceeds from privatization over GDP and the average share of proceeds from SIPs over total proceeds from privatization.

Turkey and Egypt lead the region with a total number of transactions per year largely above the mean level recorded for the whole region recording about 14 and 12 transactions per year compared to mean level of 7 transactions per year. These two countries chose to undertake a huge process of privatizations in several sectors. Egypt lunched an official privatization program in 1991 as a part of its wider economic reform strategy. Earlier in Turkey where since 1985, privatization became a pillar in the Turkish economy's liberalization program.[4] Despite a mean level of about 6 transactions, Ben Naceur et al. (2007a) note that the privatization process in Morocco was relatively slow during the 1990s and acceleration is observed after the year 2000. 78% of the revenue is recorded solely in years 2001 and 2003. The privatization process in Tunisia is started in 1987 as a part of a global strategy fixed by the government in order to improve SOEs' efficiency, to contribute to the consolidation of the state budget, and to reinforce the financial markets.

It is also interesting to look at the level of the volume of privatization measured by the proportion of total proceeds over GDP. Higher volumes are recorded for Morocco (2.04%) followed by Jordan (1.4%) and Kuwait (1.07%) reflecting likely a concentration in time and may be big SOEs that was privatized during this period generating an important revenue. For the other countries, Egypt exhibits a mean level of about 0.95% near the mean level for the whole region (0.96%). Despite the engagement of Tunisia and Turkey earlier in such programs, lower levels of revenues are obtained from privatization as a share of GDP (0.63% and 0.45%, respectively).

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[4] See Ben Naceur et al. (2007a).

Involvement of the financial system appears through the evaluation of the share of proceeds from SIPs over the total proceeds which could indicate in same time the importance of stock markets as an instrument for privatizations. When the mean level for MENA countries is around 29.2%, we record higher levels for more developed markets like Egypt (about 43%), Jordan (about 45%) and Kuwait (45.6%).

3. The impacts of privatization on stock market development

3.1. Theoretical and empirical background

3.1.1. Literature review

a) Microeconomic effect of privatization

The potential effect of the ownership change on economic growth is rooted in the microeconomic theories used to justify the reform, namely the property rights theory, public choice theory and principal agent theory (Alchian, 1965; Jensen and Meckling, 1976). First, the ownership issue is important in determining the property rights and incentives of individuals to better use and preserve the resources they are allocated. Since citizens have no residual claims on public assets, and thus have no incentives to monitor the managers of SOEs, then as sustained by Alchian (1965), Megginson (2005) and Adams (2006), the likelihood that public firms will be inefficient is high. The political view of privatization, also called public choice theory, argues that SOEs are inefficient because they are used as political tools to extract political benefits. By imposing political objectives to the firms (such as maximizing employment to ensure the votes of citizens) at the expense of efficiency and profitability objectives, the politicians and bureaucrats contribute to the inefficiency of SOEs. Only a change in control and the severance of the ties between the firm and political influence will thus lead to better performance and efficiency (Boycko et al., 1996).

The management view of privatization is based on the agency theory argument about the incentives of managers. The switch of ownership from public to private can contribute to improve the firm performance by inducing a change in corporate governance and "the

mechanisms through which different institutional arrangements affect the incentives for managing enterprises" (Laffont and Tirole, 1991; Cook and Uchida, 2003). Once government control is relinquished, both internal and external mechanisms of corporate governance will help tackle the moral hazard and adverse selection problems that plague former SOEs. All these micro-economic perspectives of privatization suggest that we should expect the improved performance, efficiency and profitability of newly privatized firms to be reflected in macroeconomic aggregates and ultimately in sustained economic growth.

Over the past few decades, privatization, a worldwide phenomenon, has become an important area for both theoretical and empirical research. An extensive literature has focused on the impact of the privatization reform, defined as the sale of public assets and state-owned firms to the private sector, at the micro-level. More specifically, a first-generation literature has looked at the effect of privatization policies on the performance of former SOEs, their corporate governance structure, their productivity, their pricing, etc. Recent studies on privatization take it instead to the next level, and try to examine other issues related to macroeconomic indicators, by investigating whether privatization triggered changes in budget deficits, institutional indicators, stock market development, government bond spreads and yields, and economic growth. As of today however, only scarce evidence exists overall on these important issues.

Empirical studies that focused on the microeconomic impact of privatization are numerous and masterly reviewed in Megginson and Netter (2001), and overall conclude that privatization indeed leads to improvements in operating performance, productivity and efficiency (Megginson et al., 1994; Boubakri and Cosset, 1998; D'Souza and Megginson, 1999, Boubakri et al, 2005; D'Souza et al., 2005). Several country studies, from either developed or developing countries, confirm these results (Omran (2004) for Egypt, and Gupta (2005) for India among others). Megginson and Netter (2001) conclude their survey on the empirical literature on privatization by writing that "in most settings, privatization 'works'".

b) Impact on macroeconomic growth

Despite more than two decades of privatization, the literature addressing the macroeconomic effects of privatization and particularly its implications on growth is still sparse. Most available evidence is descriptive and anecdotal. For example, according to the

World Bank, "countries, which had firmly committed themselves to privatization such as Chile and Mexico, had experienced higher rates of growth than countries in Sub-Saharan Africa where progress with respect to divestment was slow" (World Economic Outlook, 1994, p.50). The sparse empirical studies that address this issue lead to ambiguous results. While Plane (1997) and Barnett (2000) find a positive impact of privatization on growth, Cook and Uchida (2003), Filipovic (2005), and Adams (2006) report the opposite. As pointed out by Cook and Uchida (2003), economic performance is likely to be affected by "factors that affect the wider economic environment in which privatized firms operate", which may lead to spurious results when assessing the impact of privatization on economic growth. Indeed, in developing countries for instance, privatization is often concomitant with liberalization in trade and financial policies to encourage foreign investment. Thus assessing the separate effect of privatization is a challenging task.

The other constraint upon earlier empirical studies was the unavailability of a sufficiently long window that allows to fully observing the dynamic of privatization which are likely to materialize in the longer run rather than contemporaneously. With two decades of privatization experience now behind us, re-examining the role of privatization in the growth process becomes timely and called for.

There are to our knowledge only few studies that empirically assess the macroeconomic impacts of privatization. In the growth literature, few have attempted to incorporate the privatization reform among other policy variables that encompass monetary and fiscal discipline performed such an analysis in a context of transition to a market economy. Havrylyshyn et al. (1998), analyzing growth performance for 25 transition countries between 1990 and 1997, use an index of structural reforms that includes privatization, enterprise reform and financial sector reform. Bennett et al. (2004) study the role of the method of privatization in economic growth for 23 transition countries over the period [1991-2001] and find that the sale of state assets through full privatization has no significant impact on growth, whereas mass privatization does. The authors argue that their results suggest that full privatization may not prove efficient if the capital markets are underdeveloped. The authors also specify that they consider that the method of privatization is an exogenous policy, which is unlikely. In the same vein, and using a cross-country sample of 25 transition economies, Zinnes et al. (2001) find that privatization does not increase GDP growth, unless it is accompanied by "hard budget constraints and in-depth institutional reforms". However, the

political, institutional and economic backgrounds of transition countries are quite different from those of developing or developed markets economies, which make generalizations of the results inappropriate.

Recently there have been a few attempts to empirically investigate the relation between privatization and economic growth in the context of developing countries. A first study by Plane (1997) uses data for 35 developing countries over the period [1984-1992]. The author first analyzes and tests the determinants of privatization by means of cross sectional Probit and Tobit models. He then examines the relationship between the average GDP growth rate and a set of explanatory variables including the implementation of privatization programs. He finds that privatization positively affects GDP growth with a more pronounced impact for activities of a public goods type than for other sectors. He finds that on average, the reform increased economic growth from 0.8% to 1.5% between the sub periods [1984-1988] and [1988-1992].

Barnett (2000) uses a country-level panel data of 18 countries including only 10 developing countries, the rest being transition economies. This study explores the impact of privatization on fiscal variables, growth, unemployment and investment. The empirical evidence indicates that privatization is positively correlated with real GDP growth rates. The estimation suggests that privatization of 1% of GDP would be associated with an increase in the real GDP growth rate of 0.5% in the year of privatization and 0.4% in the following year. For the non-transition sample, the effect would be a 1.1% increase in real GDP growth rate in the year of privatization and 0.8% in the following year. However, as acknowledged by the author himself, the results of this study are based on a select sample of countries and for a limited period for which data is available. For each country, the sample corresponds to the period of active privatization for which data are available, but the author does not specify the precise span of years for the study. Furthermore, he warns that the privatization variable is likely to serve as a proxy in the regressions for one or more omitted variables measuring other policy reforms.

Cook and Uchida (2003) apply a cross-country growth regression analysis using the framework of the extreme bounds analysis. They use data for 63 developing countries between 1988 and 1997, and find that privatization has contributed negatively to economic growth. They conjecture that this result, which goes against the theoretical expected positive

impact of privatization, is due to the lack of competition in the private sector that hinders economic growth, and impedes privatization from delivering its anticipated positive impact. The authors, however, do not control for the method of privatization, which is very likely to affect the privatization proceeds used in the study to measure privatization.

Palia and Phelps (2000) include in a growth regression model a private ownership variable capturing the scope of private enterprise and control of commercial enterprises. They use a sample of 43 countries over the period [1960-1985], and find that, after controlling for education, initial per capital GDP growth and economic system, economic growth is positively related to private ownership and control. Aside from acknowledging their "data set excludes countries … such as China and the Soviet Union", the authors provide no description of their country sample.

Finally, we know of one study on the privatization experience of developed countries, performed by Katsoulakos and Likoyanni (2002) who investigate the relationship between privatization and macroeconomic variables using country-level panel data of 23 OCDE countries for the period [1990-2000]. The authors examine the link between privatization receipts on the one hand, and budget deficit, public debt, output growth and unemployment rate, on the other hand. The estimation results indicate that there is no statistically significant relation between GDP growth rates and the privatization proceeds of the previous period. This conclusion is drawn from a model where the dependent variable is the GDP growth rate and the only explanatory variable is the privatization receipts (as a percentage of GDP of the previous period). One concern with this specification is that it suffers from omitted variables bias.

Two more recent studies by Filipovic (2005) and Adams (2006) re-examine this issue, for a set of developing countries and Sub-Saharan African countries, respectively. Filipovic (2005) tries to consider the effects of competition, foreign direct investment, national debt, and property rights by interacting them with the privatization variable using a sample of developing countries during the [1990-1999] period. Following Plane (1997), and Cook and Uchida (2003), the author measures the magnitude of privatization measured by the total privatization proceeds during the period [1990-1999] as a percentage of GDP in 2000. He finds that privatization is negatively correlated with growth although insignificantly. The inclusion of additional controls and interaction terms do not alter this main finding that

privatization is uncorrelated with economic growth. Adams (2006) also establishes that in a sample of Sub-Saharan African countries over the period [1990-2001], privatization is negatively (although insignificantly) correlated with growth which contradicts the theoretical expectations with respect to this issue.

In a nutshell, all the studies anticipate a positive correlation between privatization and economic growth, although the empirical evidence to date, as discussed above, establishes ambiguous results. Furthermore, most studies use dated samples, and focus primarily on either transition economies and/or developing countries. Finally, the use of cross sectional regressions, and more rarely of panel samples, does not allow drawing robust inferences. An additional concern in the above mentioned studies is with respect to the control variables. Growth theory provides no guidance as to the choice of variables to include in the growth regression, and Levine and Renelt (1992) raise this issue by concluding that "over 50 variables have been found to be significantly correlated with growth in at least one regression", including, among other determinants, initial conditions, policy variables and institutional variables. Most models include investment, population growth, initial per capita GDP, and initial human capital.

c) Impact on stock market development

Most studies on the privatization experience of developing countries show that it is generally followed by an increase in the efficiency, profitability and capital investment spending of newly privatized firms, and a decrease in their leverage. The empirical literature on the impact of privatization on stock market development is relatively new. For instance, Boutchkova and Megginson (2000) study the impact of SIPs on the development of world stock markets for a sample of 43 countries over the period [1990-1999]. They find that SIPs contribute significantly to the nearly eleven-fold increase in the total capitalization of the world's stock markets, and play a significant role in the explosion of global stock market liquidity (each additional SIP increases stock market turnover by 2.3 percent in the first year and 1.7 percent in the following year). They derive these results by running a regression of the number of privatization transactions per year on stock market liquidity.

Perotti and van Oijen (2001) argue that privatization contributes *indirectly* to the development of local stock markets through the resolution of political risk. They test this

hypothesis for a set of 31 privatizing countries over the period [1988-1995]. They present evidence that the resolution of political risk through privatization has significantly contributed to explain the surge of emerging stock markets. More recently, Bortolotti et al. (2007) provide new evidence on the contribution of SIPs to the increase in domestic stock market liquidity from a sample of 19 developed economies. SIPs have a spillover effect on the price impact of new privatized stocks. This finding is consistent with the liquidity thesis that stresses the role of risk sharing and diversification provided by listing. In the same vein, but for a larger sample of 61 developed and emerging countries, Boubakri and Hamza (2007) investigate the link between stock market development (reflected by size, liquidity and concentration) and privatization (the method of divestiture and the reform intensity). Their results indicate no contemporaneous impact on equity market development in both developed and emerging markets. However, the one-year and two-year lagged effect of privatization on stock market size and liquidity are significant in emerging markets for both measures of privatization while a significant effect is recorded only for the one-year lagged variable in developed countries and only for the intensity of privatization measure. Finally, de la Torre et al. (2007) analyze the impact of capital markets reforms on stock market development and internationalization. The evidence suggests that reforms including privatization are positively related to local stock market development. Additionally, reforms increase internationalization and make local firms more attractive, enabling them to tap international stock markets.

In a theoretical model, Chiesa and Nicodano (2003) show that SIPs contribute to stock market development provided that some of the specific features of privatization are found to be correlated with stock market development. Among such features, they identify the improved diversification opportunities for SIPs from the telecommunications and the public utilities' sectors, and the higher number of local and foreign investors. Perotti and Laeven (2001) show, using a dynamic model, that privatization gradually strengthens the institutional framework by reducing the legal and policy uncertainty that hampers stock market development. They use a panel of 22 emerging markets over the period [1988-1995] to test their theoretical model, and find that the progress of privatization indeed gradually leads to an increase in investors' confidence and a reduction of policy risk, which in turn has a strong effect on local market development, even after controlling for the onset of financial liberalization.

Overall, the empirical and (limited) theoretical literature on the potential impact of privatization on domestic stock market development suggest two potential channels through which such an effect occurs. A *direct effect* comes from the choice of privatization method. Namely, using SIPs will lead to more firms listed on the stock markets, thus increasing the size and market liquidity. As shown by Megginson et al. (2004), SIPs are typically larger than traditional initial public offerings (IPOs). Liquidity should increase as a result of local investors' participation in the offering, as well as foreign investors, to whom a percentage is often offered. An *indirect effect* stems from the privatization sustained efforts observed over time. Sustained privatization efforts will signal to investors the government commitment to bear residual risk, in the sense of Perotti (1995). This positive signal reduces the uncertainty regarding future government actions and policy reversals, and contributes to solve the policy uncertainty embedded in privatization. This in turn will encourage investors to increase their demand for privatization offerings, increasing, by doing so, market liquidity.

3.1.2. Main hypotheses to be tested

When analyzing the economic impact of state divestiture, we rely on the two potential channels, mentioned just above, and suggested by the empirical and (limited) theoretical literature by which privatization may affect domestic stock market development. Consequently, and based on the discussion above, we posit the following general hypotheses:

H1: Privatization should have a positive impact on the size of domestic stock markets.
H2: Privatization should have a positive impact on the liquidity of domestic stock markets.

Although the studies discussed above consider emerging markets, they usually treat them as a homogeneous group of countries. As discussed earlier, this does not reflect the different dynamic of the reform observed across countries. Some emerging markets started to privatize much earlier than others. For instance, privatization in Asia started towards the end of the eighties-beginning of the nineties, compared to the MENA region where privatization began a decade or more later. Privatization efforts have thus been unequally distributed across regions, depending on the willingness of the governments to go ahead with the reform, often perceived as being highly controversial. Additionally, the use of share issues on the stock markets were often conditioned by the level of initial market development, the equity culture of potential investors, and the prevailing framework for investor protection. In this

regard, the MENA and African regions lag behind countries from South East Asia and Latin America. Finally, the nature of the firms put for sale differs across regions. While Latin American countries started privatizing firms in the financial and banking sector, countries in the Asian region started privatizing large infrastructure and utility firms. In comparison, countries in the MENA region divested, until recently, mostly manufacturing firms in competitive sectors. All these features make the privatization process particular in its dynamic from one region to another. Owing to these particularities, we expect privatization to affect stock market development differently across emerging markets.

3.2. Econometric modeling

3.2.1. Sample and data description

Table 3- List of countries

Africa	Asia	Latin America	MENA
Côte d'Ivoire [1991-2000]	China [1991-2007]	Argentina [1988-2006]	Bahrain [1993-1999]
Ghana [1989-2007]	India [1991-2007]	Brazil [1988-2008]	Egypt [1993-2007]
Kenya [1988-2007]	Indonesia [1991-2008]	Chile [1988-2006]	Jordan [1995-2002]
Nigeria [1989-2007]	Korea [1992-2007]	Colombia [1988-2007]	Kuwait [1994-1998]
South Africa [1989-2007]	Malaysia [1988-2008]	Guatemala [1989-1999]	Morocco [1993-2008]
Tanzania [1992-2007]	Pakistan [1990-2008]	Jamaica [1988-2002]	Tunisia [1988-2008]
Uganda [1992-2006]	Philippines [1987-2008]	Mexico [1988-2008]	Turkey [1988-2008]
Zambia [1993-2000]	Singapore [1990-2007]	Paraguay [1994-1998]	
Zimbabwe [1994-2003]	Sri Lanka [1989-2007]	Peru [1991-2007]	
	Thailand [1988-2007]	Venezuela [1989-1999]	

Time span for each country corresponds to availability of observations relating to variables which indicate a measure of privatization. For some countries, periods can be shortened because of the lack of some observations especially relating to variables which measure stock market development. For Ghana, Ghana Stock Exchange (GSE) was founded in 1989 and official activities started in 1991. So, no observations for stock market development variables are available before 1991. Despite the creation of the National Stock Exchange of Guatemala (Bolsa Nacional de Valores (BNV)) in 1989, no data are available for the years 1989 to 1994. For Tanzania, data on stock market development variables are not available before 1998, the date of creation of Dar Essalam Stock Exchange (DSE). For Uganda, Uganda Stock Exchange (USE) was founded in 1997 and started activities in 1998. Observations for stock market development variables are available only since the year 2000. Finally for Zambia, variables indicating stock market development are available since the year 1995 because the Lusaka Stock Exchange (LSE) was founded in 1993 and no observations for these variables are given for the years 1993 and 1994.

Our empirical study is conducted on a panel of 36 countries from Africa, Asia, Latin America and the MENA region as shown in Table 3. These countries have engaged in varying degrees of extensive programs of privatization during the period covered by the study. The panel is unbalanced since no uniform time span is available for all countries. The period under study goes globally from 1987 through 2008.

In our econometric modeling, which will be developed below, the dependent variable indicates a measure of stock market development. To this end, each of the following four indicators will be considered. (1) A variable which measures the overall size of markets per country per year and called Market Capitalization (MC). It is defined as the ratio of the value of listed domestic companies' shares on each country's stock exchanges over GDP. (2) A variable considered to measure market liquidity, called the Value Traded (VT), is defined by the ratio of the total value of domestic equities traded on each country's stock exchanges over GDP. VT and MC are complementary since VT reflects the actual volume of market transactions along with the overall size of the market.[5] (3) A relative measure of market liquidity to its size defined as the ratio of the value of stocks traded to the total market capitalization that is the Turnover Ratio (TR). According to Boyd et al. (2001), VT and TR are considered to illustrate market liquidity. In the same vein, they are complementary since VT measures trading with respect to the size of the economy while TR measures trading with respect to the size of stock markets. (4) A composite indicator named the Stock Market Index (SMINDEX). This indicator is useful since MC, VT and TR variables do not reflect, when considered separately, the whole components of the development of stock markets. The size of the stock market does not provide any indication of its liquidity. The composite index of stock market development (SMINDEX) is obtained using a formula which is similar to the algorithm developed by Demirgüç-Kunt and Levine (1996a). Specifically, construction of SMINDEX follows a two-step procedure. First, for each country i and each time t, transformed variables of Market Capitalization, Value Traded, and Turnover Ratio are computed. We define the transformed value of each stock market indicator, named SM,[6] as follows:

$$SM_{it}^{t} = \frac{SM_{it} - \overline{SM}}{\left| \overline{SM} \right|} \tag{1}$$

$\overline{SM}$ is the average value of variable SM across all countries in the panel over the period of observation for each one. Second, we record a simple average of the transformed values of Market Capitalization, Value Traded, and Turnover Ratio obtained by expression (1) in order

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[5] See Boyd et al. (2001).
[6] SM indicates variables MC, VT, or TR.

to provide the overall stock market index, namely SMINDEX. Stock market development indicators MC, VT and TR come from World Development Indicators database (WDI) and serve to the calculation of the composite index SMINDEX.

A key variable to be included in the econometric specifications is one which represents privatization. Indeed, there is no consensus on a unique measure of privatization. In the economic and financial literature, more than one proxy for privatization is used. To this end, four proxies for privatization are considered in order to capture the effect of privatization effort and that of the method of privatization. Two measures are usually used to capture the effort of privatization that are (1) the total number of privatizations per country per year (TNP) and (2) and the ratio of total proceeds from privatizations over GDP (PRIV). The main advantage of such ratio is that it reflects the global economic impact of one country's process of privatization. It also measures the overall volume of the country's privatization, and thereby captures the government commitment towards market reforms and privatization (Perotti and van Oijen, 2001). The ratio PRIV is also considered as a measure of governments' willingness to privatize (Bortolotti et al. 2001). In order to highlight the effect of the method of privatization as well as the willingness of governments to have recourse to the stock market as a source of financing, we use either (3) the proportion of SIPs in the total number of transactions (PO), or (4) the ratio of proceeds from SIPs over total proceeds from privatizations (SIP).[7] All indicators used as proxies for privatization are expected to influence positively stock market development. They exhibit in the econometric model both current and first lagged effect. So, a global effect is captured through the sum of the coefficients associated to a privatization variable observed in the current period and in the past period, respectively. To this end, data have been compiled by Boubakri and Hamza (2007) and completed by the authors in the present study from Security Data Corporation (SDC) database as well as the World Bank database on privatization transactions. Estimation could be run over the whole sample, but heterogeneity among regions could be detected after creating dummy variables for the four regions and crossing them with privatization variables.

In addition to privatization variables, a set of explanatory variables is also considered. Such variables were used in several previous empirical studies as determinants of stock

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[7] See Perotti and van Oijen (2001), and Ben Naceur et al. (2010), among others.

market development. They can be grouped into two subsets that are macroeconomic variables and institutional ones.

Five variables are selected to represent the macroeconomic environment.[8] An income variable, named gGDPCAP, represents economic growth and is measured by the annual rate of growth of per capita GDP at market prices based on local currency. This variable is expected to exhibit a positive effect on stock market development since it reflects the dynamics of business cycle. When income increases, its cyclical component should have a positive incidence on the size of the stock market. On the other hand, higher income means better level of education, better business environment and wealthy citizens. Billmeier and Massa (2009) add a supplementary explanation according to which the willingness of consumers to invest in the stock market increases when firms listed on the stock market present signals of good health and growth.[9] In order to reduce the endogeneity bias, first lagged values of gGDPCAP are considered.[10]

An important determinant of stock market development is the investment rate, named INVEST, which is the gross fixed capital formation divided by GDP. Like the income variable, INVEST is also introduced in first lagged form. Importance of investment lies in the fact that stock market is a place on which saving is transformed to investment projects.[11]

The role of financial intermediary development is measured by variable CREDIT which is the ratio of domestic credit to the private sector over GDP.[12] Since both banks and stock markets intermediate savings towards investment projects, they can be either complements or substitutes. Boyd and Smith (1996) suggest that banks and stock markets may behave as complements rather than substitutes. Empirically, Demirgüç-Kunt and Levine (1996b) show that the degree of stock market development is positively related to bank development. Conversely, Garcia (1986) finds that central banks may generate a negative correlation between bank growth and stock market development. Despite the controversial debate about

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[8] See Garcia and Liu (1999), as well as Ben Naceur et al. (2007b) for a specific study on MENA region.
[9] In some studies on the relationship between stock market development and growth, income variable could also be proxied by the real GDP (Garcia and Liu, 1999; Ben Naceur et al., 2007b), the real GDP per capita (Rajan and Zingales, 2003), or the GDP growth (Garcia and Liu, 1999).
[10] See for instance Billmeier and Massa (2009).
[11] Beside, in some empirical studies, the saving rate is also used to indicate the same determinant of stock market development (Garcia and Liu, 1999).
[12] In other empirical studies, either liquid liabilities (M3/GDP) (Ben Naceur et al., 2007b), or the ratio of money stock (M2/GDP) (Calderon and Liu, 2003) are used as indicators of the banking system development.

the relationship between the banking system development and the stock market development in providing funds to the private sector, the complementary hypothesis seems to be the more realistic leading to an expected positive relationship between CREDIT variable and the stock market development indicator.

Macroeconomic stability is measured by the inflation rate (INFLATION) which captures the state of the economy as we expect investors to be relatively more optimistic in periods of expansion, and stock markets to become larger and more liquid in favorable macroeconomic environments.[13] The correlation between this variable and the stock market development indicator is expected to be negative.

World business cycle effect could be proxied by the US federal funds rate (FFRATE) as a measure of global liquidity conditions. According to Billmeier and Massa (2009), this variable shows whether the opportunity cost of investing in safe assets is critical for stock markets in emerging markets considered in the panel. Consequently, it is expected to have a negative effect on the stock market development indicator. All the economic variables are collected from the WDI except the US federal funds rate which is obtained from the US Federal Reserve website.

The set of institutional variable consists of three variables. First, a variable named LIB is considered in order to measure the impact of the liberalization of financial markets. Variable LIB takes on the value one in the year of official liberalization and all years afterwards, and zero otherwise. More open markets are more likely to attract foreign investors, who can boost local stock market development. This variable is expected to yield a positive sign when related to stock market size and liquidity as well as to the composite index.[14] This measure is compiled from the International Finance Corporation (IFC) database and several issues on emerging markets fact books.

A second variable, named ITLAWS is conceived to measure stock markets' integrity or the enforcement of insider trading regulations. It takes on value one in the year of establishment of insider trading laws and all years afterwards, and zero otherwise. It

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[13] In some studies, inflation change (Billmeier and Massa, 2009), and the standard deviation of twelve-month inflation rate (Garcia and Liu, 1999) as indicators of the volatility of the economy could be also used.
[14] See Bekaert et al. (2005).

represents the extent to which laws against insider trading are enforced by looking at the effective number of prosecutions against insiders who violated these laws on the book. The data comes from Bhattacharya and Daouk (2002). We expect market integrity to signal better and less risky investment opportunities, which should be reflected in a market size and more liquidity.

A third variable, named CORRUPTION which is an index obtained from the International Country Risk Guide (ICRG) database measuring the perceived level of corruption per country per year. It takes values in a scale from zero (most corrupt) to six (least corrupt). It can be interpreted as a measure of the degree of protection offered to investors. Therefore, it captures the lack of transparency and reliance upon the legal system. Relating to this concept, a safe environment with less corruption enables investors to lay an entrepreneurship culture, thus contributing to the development of stock markets. According to this definition, the correlation between CORRUPTION variable and stock market development measure is expected to be positive.

3.2.2. Descriptive statistics

Table 4 provides the average levels of the considered stock market development indicators for the different geographical regions which are Africa, Asia, Latin America and MENA. Such subdivision permits to distinguish between performances of these four regional blocs of emerging markets. Moreover, the same table gives the means of MC, VT, TR and SMINDEX for the full sample of these 36 countries. Relating to size, and in comparison with the whole sample (47%), Asian stock markets are the largest ones (63.5%) while MENA markets appear to have a size just at the average level of the whole emerging markets in the sample. On the other hand, African and Latin American stock markets are smaller (40.1% and 31.8%, respectively). According to the liquidity indicator VT, Asian stock markets are also more liquid than the other regions (they appear to be twice as liquid as the whole sample). VT is very low for African and Latin American stock markets (about 9% and 6%, respectively). The same trend is observed when we look at the relative indicator of liquidity TR except that the proportion for MENA region is closer to the mean level of about 44%. Considering the whole components of the development of stock markets through the composite index SMINDEX, Asian stock markets seem to be the most developed.

Table 5 presents the annual average levels for the explanatory variables in the model for the full sample and according to the subdivision into four regions. The average total number of privatizations is more important in MENA region with about 7 transactions per year over the period of observation exceeding the average level for the full sample by one transaction per year. Latin America is also above the mean level observed for the full sample (6.415) which indicates a concentration in the effort of privatization over a short period of time than in the other regions especially in Africa (4.86). Figures obtained for the proportion of proceeds from privatizations over GDP (PRIV) corroborate what we found for the TNP variable.

Table 4- Description of regional disparities in stock market development

	Africa	Asia	Latin America	MENA	Full sample
Market Capitalization (MC)	0.401	0.635	0.318	0.474	0.47
Value Traded (VT)	0.0889	0.428	0.0594	0.188	0.213
Turnover (TR)	0.0951	0.841	0.213	0.438	0.442
Stock Market Development Index (SMINDEX)	-0.599	0.366	-0.0547	-0.284	-0.201
Number of observations	136	187	159	99	581

This table presents the yearly means of stock market development indicators calculated over the period 1987-2008 for the four considered regions in the sample as well as for the full sample. The considered measures of stock market development indicators are Market Capitalization (MC), Value Traded (VT), Turnover Ratio (TR), and SMINDEX variable that is the composite index of stock market development.

MENA leads with an amount of proceeds from privatization accounting for near 1% of GDP during the period of study. The other regions record proportions above the mean level observed for the full sample except for Asian countries (0.42%). When we look at the method of privatization (either PO variable or SIP variable, respectively), MENA countries remain also slightly over the average values recorded for the whole sample. A higher proportion of transactions were conducted through share issues in Asian countries that lead the sample (because their stock markets are more developed than those of the other regions (37.6% for PO, and 41.3% for SIP). African countries with the least developed stock markets record proportions short of the mean value for the whole sample (22.9% for PO, and 23.8% for SIP). Latin American stock markets record weaker proportions (11.3% for PO, and 14.8% for SIP) because these countries choose usually direct selling of SOEs to a strategic investor.

Concerning economic variables, the preponderance of the financial intermediaries system in Asia and MENA is shown through high levels of the indicator credit to the private

sector (about 70% and 51.6%, respectively). These values are above the benchmark value observed for the whole sample (47.1%). This proportion is weaker for Africa and Latin America located well below the mean value of the whole sample. Macroeconomic stability, observed through the inflation rate, seems to be better in Asian countries (6.36% on average), followed by MENA countries with about 15%, and Africa (22%). National effort towards financing projects is also largely in favor of Asia where the observed rate of investment is above the benchmark value (27.5% versus 22.8%). Such effort is less in Africa and Latin America while MENA countries are located at the same level as the whole sample with a rate of investment of about 22.5%. As for growth, Asian countries exhibit the highest level of per capita GDP growth (4.24%) well above the mean level of 2.52% while MENA countries present a level slightly below the mean level of the whole sample.

Table 5- Descriptive statistics

	Africa	Asia	Latin America	MENA	Full sample
Privatization (TNP)	4.86	5.689	6.415	7.0303	5.922
Privatization (PRIV)	0.00677	0.00423	0.00807	0.00962	0.0068
Privatization (PO)	0.229	0.376	0.113	0.291	0.255
Privatization (SIP)	0.238	0.413	0.148	0.374	0.292
Income (gGDPCAP)	0.0104	0.0424	0.0186	0.0235	0.0252
Investment (INVEST)	0.181	0.274	0.207	0.224	0.227
Financial intermediary (CREDIT)	0.3	0.702	0.317	0.516	0.471
Macroeconomic stability (INFLATION)	0.22	0.0636	1.205	0.145	0.426
World business cycle (FFRATE)	4.553	4.411	4.846	4.414	4.564
Liberalization (LIB)	0.551	0.951	0.792	0.818	0.791
Integrity (ITLAWS)	0.753	0.957	0.805	0.747	0.833
Transparency (CORRUPTION)	2.598	2.796	2.832	2.806	2.761
Number of observations	136	187	159	99	581

This table presents the yearly means, calculated over the period 1987-2008, of the considered explanatory variables for each region in the sample as well as for the full sample.

Looking at the considered institutional variables and in terms of openness to foreign investors, all the regions express an interest to financial liberalization except Africa for which the variable LIB exhibits a mean value of 0.55 largely below the benchmark value of 0.79 recorded for the whole sample. For the other regions, the average degree of openness (LIB) is either largely above the mean value of the whole sample (Asia with about 0.95) or near the mean value (MENA and Latin America with 0.81 and 0.79, respectively). Regarding stock markets' integrity and in comparison with the mean value recorded for the full sample (0.83), we observe that Asian countries, followed by Latin American ones, established a legal environment that reflects better and less risky investment opportunities. This is not yet the

case for the MENA region or for Africa. Finally, the mean level of corruption is around the mean level recorded for the whole sample (2.761) for all groups. The best level is recorded for Latin American countries (2.83) while the worst is recorded for African countries (2.59). The fashion of construction of the ICRG index of corruption that takes values from zero (most corrupt) to six (least corrupt) may have contributed to this concentration around the mean value of all the groups and possibly for all the countries.

3.2.3. The model

According to the available data, the treatment of incomplete panels is imperative. The available panel dataset for the considered countries is unbalanced since each variable is observed over varying time period lengths.

In this study, fixed effects as well as random effects models are considered.[15] The fixed effects model is defined according to following specification:

$$SMD_{i,t} = \alpha_i + \beta * privatization_{i,t} + \gamma' * macroeconomic_{i,t} + \theta' * institution_{i,t} + \varepsilon_{i,t} \quad (2)$$

Countries are denoted i (i = 1 ,…, N), and t (t = 1 ,…, T_i) the time observation for each variable. T_i is the number of time periods available for each country i. SMD is the dependent variable of the model which indicates, as mentioned above, either market size (MC variable) or market liquidity (VT variable). The relative measure of market liquidity to its size (TR variable) is also considered as well as the composite index of stock market development SMINDEX. The variable *privatization* is one of the four indicators of privatization defined above. *macroeconomic* and *institution* are two vectors which include a set of macroeconomic and institutional explanatory variables, respectively. α_i, i = 1 ,…, N, are constant coefficients specific to each country. Their presence assumes that differences across the considered countries appear through differences in the constant term reflecting certain heterogeneity. These individual coefficients are estimated together with the coefficient β, and the vectors of coefficients γ and θ.

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[15] Only fixed effects modeling is presented here since the specification test of Hausman leads to the acceptance of the fixed effects specifications in the majority of cases rather than the random effects ones.

In order to validate the fixed effects specification, the question is to prove, according to the empirical application, that the individual coefficients α_i, i = 1 ,..., N, are not all equal but differ substantially from one country to the other. This corresponds to the joint null hypothesis:

$$H_0 : \alpha_1 = \cdots = \alpha_N = \alpha \qquad (3)$$

It is rather the acceptance of the alternative hypothesis which is interesting if we expect to differentiate between the situations in each country considered in the panel, and confirm the existence of significant heterogeneity across them. The appropriate statistic of the test is a Fisher distributed one with $\left(N-1, \sum_{i=1}^{N} T_i - N - k \right)$ degrees of freedom under the null hypothesis and is defined as follows:

$$F = \frac{SSR_0 - SSR_1}{SSR_1} \frac{\sum_{i=1}^{N} T_i - N - k}{N - 1} \qquad (4)$$

where SSR_0 and SSR_1 are, respectively, the sum of squared residuals provided by the estimation of the constrained model (under the null hypothesis that is no individual specific coefficients are considered) and the sum of squared residuals relating to the fixed effects model (equation (2)). k is the number of parameters to be estimated under the alternative hypothesis (unconstrained model).

A Hausman specification test is conducted in order to compare the two categories of specifications (fixed versus random effects model). It is proven that, under the null hypothesis, the two estimates could not differ systematically since they are both consistent. Rejection of the null hypothesis leads to the adoption of the fixed effects specification since it provides more efficient estimators. Under the null hypothesis, the Hausman statistic is asymptotically distributed as chi-square with k degrees of freedom, indicating the number of the coefficients to be estimated, and is written down as follows:

$$H = \left(\hat{\delta}_{GLS} - \hat{\delta}_{FE} \right)' \left(\hat{V} \left(\hat{\delta}_{FE} \right) - \hat{V} \left(\hat{\delta}_{GLS} \right) \right)^{-1} \left(\hat{\delta}_{GLS} - \hat{\delta}_{FE} \right) \qquad (5)$$

where $\hat{\delta}_{FE}$ and $\hat{\delta}_{GLS}$ are, respectively, the vectors of estimates obtained from estimation of fixed effects and random effects models. $\hat{V}(.)$ are the corresponding variance-covariance matrices of these estimated coefficients.[16]

3.3. Empirical findings and comments

The estimation of fixed effects as well as random effects specifications was carried out using the econometric methodology described above. First, the Hausman test (equation (5)) led in a majority of cases to the acceptance of the fixed effects specifications. Consequently, fixed effects results are presented for the whole specifications since we need to consider heterogeneity across countries. Next, the F-test (equation (4)) led also to the validation of the fixed effects in all cases at high levels of significance that is the presence of individual effects which are not equal. So, the heterogeneity across countries is confirmed. Furthermore, the effect of each geographical region appears through coefficients associated to interaction variables obtained after crossing each regional dummy and the considered measure of privatization. In Tables 6 to 13, we present the results of our estimations for market capitalization (MC), liquidity variables (TR and VT) and the stock market development index (SMINDEX) using a sample of 34 developing countries.

Tables 6 and 7 present the results of estimation when the dependent variable is the market capitalization. Looking at Table 6, we observe that the privatization intensity measured by variables TNP or PRIV exhibits a the long-run positive effect since the sum of the coefficients associated to these variables observed contemporaneously and with one lag is positive. But only PRIV variable affects positively and significantly stock market size (MC) contemporaneously and with a lagged effect. Contrary to expectations, Table 7 shows that variables introduced to indicate the effect of the method of privatization (variables PO and SIP, respectively) exhibit a negative effect. When we look at the privatization interacted variables with regional dummies, the results in Table 6 indicate a long-run positive effect for all the regions except for Latin America. Such effect is significant only for Asian countries

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[16] The used software STATA 11.1 reports a problem which one can encounter in some applications and we encountered in the empirical study. In finite samples, the matrix of variance-covariance of the difference between the two estimators is estimated by the difference between the variances of the estimated coefficients which is consistent, but not necessarily positive definite. In this case, the Hausman test is undefined since it provides a negative value for the estimated statistic of the test. We obtain, unfortunately, such result in two cases (Tables 9 and 10 below).

variable (PRIV*ASIA). Only markets from Asian region benefit significantly from privatization progress. In Table 7, the impact at the regional level is either negative or insignificant for all the regions.

By looking at Tables 8 and 9, we can see that market liquidity, as measured by the Value Traded variable VT, is significantly and positively related to the intensity of privatization (PRIV variable) in the whole sample both contemporaneously and with a lagged effect. The positive correlation between privatization and market liquidity is also positive, but not significant, when we consider TNP or SIP variables, respectively. It is negative when we introduce the PO variable to reflect the effect of the method of privatization. We can note that privatization progress, essentially, creates a positive signal of government commitment toward market-oriented reforms, which improves investors' confidence (first channel of transmission). This, in turn, translates into their willingness to buy and hold shares of newly privatized firms on the stock market. Hence, the positive effect on market liquidity (second channel of transmission). Looking at the regional direct effect to control for the cross-regional differences, we can record that the Asian bloc drives the overall results of PRIV and TNP at the long-run, since a positive and significant effect is obtained, whatever the statistical significance is obtained only for the contemporaneous effect of the number of privatizations (TNP variable).

In Tables 10 and 11, we run the same specifications using market turnover (TR variable) as a measure of stock market development. The results, obtained for the whole sample, show that overall there is no significant effect of privatization on market turnover for the four measures of privatization although such effect is positive in the long-run for all these variables. However, the regional analysis suggests that privatization proceeds (PRIV*ASIA variable) and SIP proceeds (SIP*ASIA variable) are positively and significantly related to the stock market turnover in Asia (long-run effect). Results are mitigated for the other regions with positive but not significant effect for many regions depending on the variable used as a measure of privatization.

In Tables 12 and 13, we run again the same specifications using the composite stock market index SMINDEX. The results provide evidence that privatization extent (PRIV variable) is the only variable that impacts positively and significantly stock market development. For the other measures of privatization, only the positive expected sign is found

contemporaneously and for the lagged privatization variable. The same result is also driven by the Asian region since PRIV*ASIA and SIP*ASIA variables are associated positively and significantly with the composite stock market index.

Regarding the macroeconomic variables, most of them exhibit the expected signs but not all associated coefficients are significant. We note, first, that the country wealth, measured by an income variable (gGDPCAP(-1)) is positively related to stock market development whatever the extent of the indicator. This translates the positive relationship between growth and stock market development. Statistical significance is not recorded when the dependent variable is either TR or SMINDEX. Next, the investment rate (INVEST(-1) variable) exhibits the positive expected sign only in correlation with the market size (MC variable) and is also significant in presence of the SMINDEX variable in the model. Investment contributes to the development of the stock market (positive association with SMINDEX) but at the expense of stock market liquidity (negative association with VT and TR variables). The impact of the financial intermediary (CREDIT variable) is positive for all the specifications confirming the complementarities between the banking sector and stock markets in financing economic activities. Such relation is statistically significant for the size measure of stock market development as well as for one measure of liquidity (VT variable). The negative impact of macroeconomic stability (INFLATION variable) and the world business cycle (FFRATE variable), respectively, is observed in several specifications. Inflation rate exhibits the negative and significant effect especially on the market size (MC variable). The negative impact of the world business cycle is almost everywhere insignificant.

Regarding the institutional variables, we note first that financial liberalization plays a crucial role in the development of the stock markets with a positive and significant coefficient when MC is the dependent variable. The quality of institution contributes positively and significantly to the promotion of stock market liquidity as integrity (ITLAWS variable) is positively and significantly associated with stock market turnover. The only variable that exhibits a surprising result is corruption (CORRUPTION variable). Its impact on stock market capitalization (MC) and transactions (VT) is negative which means that higher corruption in a country promotes stock market development. However, a positive effect is obtained when the stock market development index SMINDEX is considered as a dependent variable, but this effect is insignificant.

Overall, our results show a positive impact of privatization on stock market development when privatization is measured using the metric proceeds (PRIV). However, we do not find a common systematic effect in all regions. It has been perceived as a positive signal only in Asia, which led to the improvement in market capitalization and liquidity. Privatizing through stock exchange is not better than using other techniques in promoting stock market development since the SIP is not significantly related in quite all specifications to either stock market capitalization or liquidity.

Table 6- Fixed effects estimates of the impact of privatization on stock market development

Variables	Market Capitalization (MC)			
Privatization (TNP)	-0.000261			
	(0.00193)			
Privatization (TNP(-1))	0.00218			
	(0.00195)			
TNP*AFRICA		0.00339		
		(0.00567)		
TNP*AFRICA(-1)		0.000766		
		(0.00575)		
TNP*ASIA		0.00458		
		(0.00338)		
TNP*ASIA(-1)		0.00601*		
		(0.00343)		
TNP*LATINAMERICA		-0.00489		
		(0.00392)		
TNP*LATINAMERICA(-1)		0.00142		
		(0.00394)		
TNP*MENA		-0.00139		
		(0.00372)		
TNP*MENA(-1)		0.00201		
		(0.00372)		
Privatization (PRIV)			1.442	
			(1.112)	
Privatization (PRIV(-1))			1.986*	
			(1.101)	
PRIV*AFRICA				1.0782
				(1.99)
PRIV*AFRICA(-1)				0.306
				(1.909)
PRIV*ASIA				8.435**
				(3.294)
PRIV*ASIA(-1)				18.811***
				(3.383)
PRIV*LATINAMERICA				-1.295
				(1.862)
PRIV*LATINAMERICA(-1)				-1.791
				(1.86)
PRIV*MENA				0.122
				(1.98)
PRIV*MENA(-1)				1.236
				(1.987)
Income (gGDPCAP(-1))	0.742*	0.82*	0.657	0.792*
	(0.431)	(0.432)	(0.432)	(0.417)
Investment (INVEST(-1))	0.254	0.114	0.287	0.022
	(0.403)	(0.41)	(0.403)	(0.389)
Financial intermediary (CREDIT)	0.484***	0.495***	0.483***	0.439***
	(0.104)	(0.104)	(0.103)	(0.0997)
Macroeconomic stability (INFLATION)	-0.0101*	-0.11*	-0.107*	-0.0103*
	(0.00601)	(0.00603)	(0.00597)	(0.00573)
World business cycle (FFRATE)	-0.0133	-0.00869	-0.0144*	-0.0104
	(0.00818)	(0.0084)	(0.00816)	(0.00785)
Liberalization (LIB)	0.114*	0.119**	0.109*	0.109*
	(0.061)	(0.061)	(0.0607)	(0.0581)
Integrity (ITLAWS)	-0.0538	-0.0301	-0.0704	-0.0771
	(0.755)	(0.076)	(0.0753)	(0.0721)
Transparency (CORRUPTION)	-0.0652***	-0.0625***	-0.0653***	-0.0744***
	(0.0214)	(0.0215)	(0.0212)	(0.0204)

Table 6- (Continued)

Hausman test	63.32***	46.96***	43.47***	37.07***
F test (heterogeneity of groups)	12.28***	12.44***	12.56***	14.35***
FF test (joint significance)	6.62***	4.65***	7.06***	7.79***
Number of countries	34	34	34	34
Number of observations	491	491	491	491

This table presents fixed effects estimation for the full sample of the 34 emerging markets over the 1987-2008 periods. In comparison with the list of countries presented in Table 3 above, Nigeria is dropped out because series on investment rate is unavailable. Côte d'Ivoire is also dropped out because of the absence on information about integrity. The dependent variable is Market Capitalization (MC variable). Privatization is proxied by either the total number of privatizations per year (TNP) or the ratio of total proceeds from privatizations over GDP (PRIV). Privatization variables crossed with regional dummies provide differentiated effect relating to regions Africa, Asia, Latin America and MENA. *Variable(-1)* means that the considered variable enters the model in a first lagged form.

Hausman test permits the choice in favour of fixed effects specifications. Rejection of the null hypothesis leads to the use of fixed effects model.

F test is conceived to check for heterogeneity between countries. Rejection of the null hypothesis confirms differences in the specific country effects.

FF test is conceived to check for the joint significance of all the coefficients after the fixed effects model is chosen.

Standard errors are reported in parentheses.

***, **, * indicate significance levels at 1%, 5%, and 10%, respectively.

Table 7- Fixed effects estimates of the impact of privatization on stock market development

Variables	Market Capitalization (MC)			
Privatization (PO)	-0.0242			
	(0.0412)			
Privatization (PO(-1))	-0.0684*			
	(0.0403)			
PO*AFRICA		-0.132		
		(0.0917)		
PO*AFRICA(-1)		-0.152*		
		(0.0919)		
PO*ASIA		-0.023		
		(0.0614)		
PO*ASIA(-1)		-0.086		
		(0.0607)		
PO*LATINAMERICA		0.0157		
		(0.112)		
PO*LATINAMERICA(-1)		0.0419		
		(0.11)		
PO*MENA		0.0417		
		(0.0907)		
PO*MENA(-1)		-0.0362		
		(0.0853)		
Privatization (SIP)			-0.00556	
			(0.0368)	
Privatization (SIP(-1))			-0.0226	
			(0.0365)	
SIP*AFRICA				-0.0742
				(0.085)
SIP*AFRICA(-1)				-0.0639
				(0.0875)
SIP*ASIA				0.0258
				(0.058)
SIP*ASIA(-1)				-0.0381
				(0.0581)
SIP*LATINAMERICA				-0.029
				(0.0876)
SIP*LATINAMERICA(-1)				0.0513
				(0.0854)
SIP*MENA				0.0152
				(0.0787)
SIP*MENA(-1)				-0.0266
				(0.0761)
Income (gGDPCAP(-1))	0.785*	0.826*	0.795*	0.797*
	(0.428)	(0.431)	(0.43)	(0.433)
Investment (INVEST(-1))	0.224	0.241	0.247	0.26
	(0.404)	(0.407)	(0.405)	(0.408)
Financial intermediary (CREDIT)	0.482***	0.474***	0.486***	0.487***
	(0.104)	(0.104)	(0.104)	(0.105)
Macroeconomic stability (INFLATION)	-0.0108*	-0.0102*	-0.0108*	-0.0104*
	(0.00597)	(0.00599)	(0.00599)	(0.00604)
World business cycle (FFRATE)	-0.0125	-0.0131	-0.0127	-0.0126
	(0.00815)	(0.0082)	(0.00817)	(0.00826)
Liberalization (LIB)	0.115*	0.124**	0.117*	0.12*
	(0.0608)	(0.0614)	(0.0609)	(0.0613)
Integrity (ITLAWS)	-0.0569	-0.0563	-0.0551	-0.0567
	(0.0752)	(0.0755)	(0.0755)	(0.076)
Transparency (CORRUPTION)	-0.0604***	-0.0642***	-0.0622***	-0.0657***
	(0.0213)	(0.0216)	(0.0213)	(0.0217)

Table 7- (Continued)

Hausman test	51.7***	85.75***	46.43***	39.41***
F test (heterogeneity of groups)	11.7***	11.54***	11.93***	11.76***
FF test (joint significance)	6.85***	4.53***	6.51***	4.16***
Number of countries	34	34	34	34
Number of observations	491	491	491	491

This table presents fixed effects estimation for the full sample of the 34 emerging markets over the 1987-2008 periods. In comparison with the list of countries presented in Table 3 above, Nigeria is dropped out because series on investment rate is unavailable. Côte d'Ivoire is also dropped out because of the absence on information about integrity. The dependent variable is Market Capitalization (MC variable). Privatization is proxied by either the total proportion of privatization through SIPs over the total number of privatizations (PO) or the ratio of proceeds from SIPs privatizations over the total proceeds from privatizations (SIP). Privatization variables crossed with regional dummies provide differentiated effect relating to regions Africa, Asia, Latin America and MENA. *Variable(-1)* means that the considered variable enters the model in a first lagged form.

Hausman test permits the choice in favour of fixed effects specifications. Rejection of the null hypothesis leads to the use of fixed effects model.

F test is conceived to check for heterogeneity between countries. Rejection of the null hypothesis confirms differences in the specific country effects.

FF test is conceived to check for the joint significance of all the coefficients after the fixed effects model is chosen.

Standard errors are reported in parentheses.

***, **, * indicate significance levels at 1%, 5%, and 10%, respectively.

Table 8- Fixed effects estimates of the impact of privatization on stock market development

Variables	Value Traded (VT)			
Privatization (TNP)	0.00183			
	(0.00171)			
Privatization (TNP(-1))	0.000744			
	(0.00173)			
TNP*AFRICA		0.0021		
		(0.0051)		
TNP*AFRICA(-1)		0.000591		
		(0.00517)		
TNP*ASIA		0.00559*		
		(0.00301)		
TNP*ASIA(-1)		0.00269		
		(0.00306)		
TNP*LATINAMERICA		0.00057		
		(0.00349)		
TNP*LATINAMERICA(-1)		-0.000456		
		(0.0035)		
TNP*MENA		-0.000637		
		(0.00331)		
TNP*MENA(-1)		0.000605		
		(0.00331)		
Privatization (PRIV)			1.741*	
			(0.984)	
Privatization (PRIV(-1))			2.697***	
			(0.979)	
PRIV*AFRICA				-0.0323
				(1.747)
PRIV*AFRICA(-1)				0.713
				(1.709)
PRIV*ASIA				11.4***
				(2.822)
PRIV*ASIA(-1)				19.706***
				(2.9)
PRIV*LATINAMERICA				0.168
				(1.596)
PRIV*LATINAMERICA(-1)				-0.00652
				(1.594)
PRIV*MENA				-0.767
				(1.697)
PRIV*MENA(-1)				0.462
				(1.703)
Income (gGDPCAP(-1))	0.964**	1.0121***	0.854**	0.988***
	(0.386)	(0.388)	(0.384)	(0.36)
Investment (INVEST(-1))	-0.249	-0.337	-0.214	-0.536
	(0.36)	(0.367)	(0.358)	(0.336)
Financial intermediary (CREDIT)	0.523***	0.528***	0.515***	0.465***
	(0.0927)	(0.0931)	(0.0917)	(0.0856)
Macroeconomic stability (INFLATION)	-0.00255	-0.00301	-0.00296	-0.00233
	(0.00535)	(0.00539)	(0.00528)	(0.00493)
World business cycle (FFRATE)	0.00152	0.00441	0.000203	0.00432
	(0.00728)	(0.00751)	(0.00722)	(0.00675)
Liberalization (LIB)	0.0284	0.0316	0.0238	0.0242
	(0.0552)	(0.0555)	(0.0546)	(0.0508)
Integrity (ITLAWS)	0.081	0.0981	0.0579	0.0481
	(0.0692)	(0.07)	(0.0685)	(0.639)
Transparency (CORRUPTION)	-0.071***	-0.0689***	-0.0713***	-0.0817***
	(0.0191)	(0.11)	(0.0188)	(0.0176)

Table 8- (Continued)

Hausman test	12.07	42.71***	0.79	27.11*
F test (heterogeneity of groups)	8.73***	8.48***	9.14***	10.49***
FF test (joint significance)	6.74***	4.43***	7.8***	10.29***
Number of countries	34	34	34	34
Number of observations	487	487	487	487

This table presents fixed effects estimation for the full sample of the 34 emerging markets over the 1987-2008 periods. In comparison with the list of countries presented in Table 3 above, Nigeria is dropped out because series on investment rate is unavailable. Côte d'Ivoire is also dropped out because of the absence on information about integrity. The dependent variable is Value Traded (VT variable). Privatization is proxied by either the total number of privatizations per year (TNP) or the ratio of total proceeds from privatizations over GDP (PRIV). Privatization variables crossed with regional dummies provide differentiated effect relating to regions Africa, Asia, Latin America and MENA. *Variable(-1)* means that the considered variable enters the model in a first lagged form.

Hausman test permits the choice in favour of fixed effects specifications. Rejection of the null hypothesis leads to the use of fixed effects model.

F test is conceived to check for heterogeneity between countries. Rejection of the null hypothesis confirms differences in the specific country effects.

FF test is conceived to check for the joint significance of all the coefficients after the fixed effects model is chosen.

Standard errors are reported in parentheses.

***, **, * indicate significance levels at 1%, 5%, and 10%, respectively.

Table 9- Fixed effects estimates of the impact of privatization on stock market development

Variables	Value Traded (VT)			
Privatization (PO)	-0.0223			
	(0.0367)			
Privatization (PO(-1))	-0.0247			
	(0.036)			
PO*AFRICA		-0.0329		
		(0.083)		
PO*AFRICA(-1)		0.000189		
		(0.0833)		
PO*ASIA		-0.0176		
		(0.0548)		
PO*ASIA(-1)		-0.0646		
		(0.0542)		
PO*LATINAMERICA		-0.00807		
		(0.1)		
PO*LATINAMERICA(-1)		0.00289		
		(0.0989)		
PO*MENA		-0.0314		
		(0.081)		
PO*MENA(-1)		0.0143		
		(0.0762)		
Privatization (SIP)			0.00736	
			(0.0327)	
Privatization (SIP(-1))			0.011	
			(0.0325)	
SIP*AFRICA				-0.0194
				(0.076)
SIP*AFRICA(-1)				0.0211
				(0.0782)
SIP*ASIA				0.0483
				(0.0515)
SIP*ASIA(-1)				0.00356
				(0.0516)
SIP*LATINAMERICA				-0.00281
				(0.0778)
SIP*LATINAMERICA(-1)				-0.00302
				(0.0758)
SIP*MENA				-0.0368
				(0.0698)
SIP*MENA(-1)				0.0261
				(0.0675)
Income (gGDPCAP(-1))	0.996***	1.0136***	0.997***	1.00387***
	(0.384)	(0.388)	(0.385)	(0.388)
Investment (INVEST(-1))	-0.273	-0.3	-0.232	-0.243
	(0.362)	(0.366)	(0.362)	(0.365)
Financial intermediary (CREDIT)	0.52***	0.518***	0.522***	0.528***
	(0.0927)	(0.0935)	(0.0928)	(0.0941)
Macroeconomic stability (INFLATION)	-0.00323	-0.00312	-0.00311	-0.00318
	(0.00533)	(0.00537)	(0.00533)	(0.00538)
World business cycle (FFRATE)	0.00273	0.00292	0.00247	0.00279
	(0.00728)	(0.00735)	(0.00728)	(0.00736)
Liberalization (LIB)	0.0345	0.0368	0.0358	0.0372
	(0.0.0552)	(0.0559)	(0.0552)	(0.0556)
Integrity (ITLAWS)	0.0715	0.0733	0.0751	0.0737
	(0.0692)	(0.0699)	(0.0692)	(0.0698)
Transparency (CORRUPTION)	-0.0665***	-0.0663***	-0.0686***	-0.0697***
	(0.0191)	(0.0194)	(0.0191)	(0.0194)

Table 9- (Continued)

Hausman test	16.31*	24.88*	4.51	-
F test (heterogeneity of groups)	8.68***	8.42***	8.64***	8.26***
FF test (joint significance)	6.62***	4.15***	6.53***	4.12***
Number of countries	34	34	34	34
Number of observations	487	487	487	487

This table presents fixed effects estimation for the full sample of the 34 emerging markets over the 1987-2008 periods. In comparison with the list of countries presented in Table 3 above, Nigeria is dropped out because series on investment rate is unavailable. Côte d'Ivoire is also dropped out because of the absence on information about integrity. The dependent variable is Value Traded (VT variable). Privatization is proxied by either the total proportion of privatization through SIPs over the total number of privatizations (PO) or the ratio of proceeds from SIPs privatizations over the total proceeds from privatizations (SIP). Privatization variables crossed with regional dummies provide differentiated effect relating to regions Africa, Asia, Latin America and MENA. *Variable(-1)* means that the considered variable enters the model in a first lagged form.

Hausman test permits the choice in favour of fixed effects specifications. Rejection of the null hypothesis leads to the use of fixed effects model.

F test is conceived to check for heterogeneity between countries. Rejection of the null hypothesis confirms differences in the specific country effects.

FF test is conceived to check for the joint significance of all the coefficients after the fixed effects model is chosen.

Standard errors are reported in parentheses.

***, **, * indicate significance levels at 1%, 5%, and 10%, respectively.

Table 10- Fixed effects estimates of the impact of privatization on stock market development

Variables	Turnover (TR)			
Privatization (TNP)	0.00257			
	(0.00274)			
Privatization (TNP(-1))	-0.00142			
	(0.00278)			
TNP*AFRICA		-0.000122		
		(0.00818)		
TNP*AFRICA(-1)		0.000163		
		(0.00829)		
TNP*ASIA		-0.00157		
		(0.00483)		
TNP*ASIA(-1)		-0.00532		
		(0.0049)		
TNP*LATINAMERICA		0.0094*		
		(0.0056)		
TNP*LATINAMERICA(-1)		-0.00159		
		(0.00562)		
TNP*MENA		-0.0000109		
		(0.00532)		
TNP*MENA(-1)		-0.0015		
		(0.00531)		
Privatization (PRIV)			2.149	
			(1.594)	
Privatization (PRIV(-1))			1.225	
			(1.586)	
PRIV*AFRICA				-0.296
				(3.041)
PRIV*AFRICA(-1)				0.52
				(2.975)
PRIV*ASIA				10.635**
				(4.912)
PRIV*ASIA(-1)				1.291
				(5.047)
PRIV*LATINAMERICA				3.831
				(2.778)
PRIV*LATINAMERICA(-1)				1.961
				(2.775)
PRIV*MENA				-0.97
				(2.954)
PRIV*MENA(-1)				0.0656
				(2.965)
Income (gGDPCAP(-1))	0.836	0.77	0.694	0.739
	(0.619)	(0.623)	(0.621)	(0.627)
Investment (INVEST(-1))	-1.335**	-1.198**	-1.282**	-1.422**
	(0.579)	(0.59)	(0.58)	(0.585)
Financial intermediary (CREDIT)	0.202	0.186	0.19	0.175
	(0.148)	(0.149)	(0.148)	(0.149)
Macroeconomic stability (INFLATION)	0.00925	0.0102	0.00899	0.00936
	(0.00859)	(0.00864)	(0.00854)	(0.00858)
World business cycle (FFRATE)	-0.00989	-0.0144	-0.0114	-0.00989
	(0.0116)	(0.012)	(0.0116)	(0.0117)
Liberalization (LIB)	-0.0807	-0.0875	-0.0862	-0.082
	(0.0887)	(0.089)	(0.0884)	(0.0884)
Integrity (ITLAWS)	0.492***	0.468***	0.476***	0.48***
	(0.111)	(0.112)	(0.111)	(0.111)
Transparency (CORRUPTION)	-0.0417	-0.0445	-0.0426	-0.0454
	(0.0308)	(0.031)	(0.0305)	(0.0307)

Table 10- (Continued)

Hausman test	13.16	-	8.57	27.49*
F test (heterogeneity of groups)	21.16***	19.41***	21.96***	20.59***
FF test (joint significance)	3.23***	2.31***	3.4***	2.49***
Number of countries	34	34	34	34
Number of observations	487	487	487	487

This table presents fixed effects estimation for the full sample of the 34 emerging markets over the 1987-2008 periods. In comparison with the list of countries presented in Table 3 above, Nigeria is dropped out because series on investment rate is unavailable. Côte d'Ivoire is also dropped out because of the absence on information about integrity. The dependent variable is Turnover ratio (TR variable). Privatization is proxied by either the total number of privatizations per year (TNP) or the ratio of total proceeds from privatizations over GDP (PRIV). Privatization variables crossed with regional dummies provide differentiated effect relating to regions Africa, Asia, Latin America and MENA. *Variable(-1)* means that the considered variable enters the model in a first lagged form.

Hausman test permits the choice in favour of fixed effects specifications. Rejection of the null hypothesis leads to the use of fixed effects model.

F test is conceived to check for heterogeneity between countries. Rejection of the null hypothesis confirms differences in the specific country effects.

FF test is conceived to check for the joint significance of all the coefficients after the fixed effects model is chosen.

Standard errors are reported in parentheses.

***, **, * indicate significance levels at 1%, 5%, and 10%, respectively.

Table 11- Fixed effects estimates of the impact of privatization on stock market development

Variables	Turnover (TR)			
Privatization (PO)	0.0573			
	(0.0589)			
Privatization (PO(-1))	0.00575			
	(0.0578)			
PO*AFRICA		-0.0104		
		(0.132)		
PO*AFRICA(-1)		0.0978		
		(0.133)		
PO*ASIA		0.118		
		(0.0878)		
PO*ASIA(-1)		-0.0663		
		(0.0868)		
PO*LATINAMERICA		0.0662		
		(0.16)		
PO*LATINAMERICA(-1)		0.0155		
		(0.158)		
PO*MENA		-0.00744		
		(0.129)		
PO*MENA(-1)		0.059		
		(0.122)		
Privatization (SIP)			0.0797	
			(0.0522)	
Privatization (SIP(-1))			0.0676	
			(0.0519)	
SIP*AFRICA				-0.0192
				(0.12)
SIP*AFRICA(-1)				0.0962
				(0.124)
SIP*ASIA				0.193**
				(0.082)
SIP*ASIA(-1)				0.058
				(0.0821)
SIP*LATINAMERICA				0.0388
				(0.123)
SIP*LATINAMERICA(-1)				0.00541
				(0.12)
SIP*MENA				-0.0126
				(0.111)
SIP*MENA(-1)				0.106
				(0.107)
Income (gGDPCAP(-1))	0.841	0.879	0.816	0.842
	(0.617)	(0.622)	(0.614)	(0.618)
Investment (INVEST(-1))	-1.282**	-1.328**	-1.233**	-1.266**
	(0.581)	(0.587)	(0.578)	(0.581)
Financial intermediary (CREDIT)	0.195	0.2	0.2	0.221
	(0.148)	(0.149)	(0.148)	(0.149)
Macroeconomic stability (INFLATION)	0.00926	0.00946	0.00952	0.00925
	(0.00855)	(0.0086)	(0.00852)	(0.00856)
World business cycle (FFRATE)	-0.0101	-0.00976	-0.00998	-0.00955
	(0.0116)	(0.0117)	(0.0116)	(0.0117)
Liberalization (LIB)	-0.0802	-0.0758	-0.0753	-0.0708
	(0.0886)	(0.0895)	(0.0881)	(0.0885)
Integrity (ITLAWS)	0.493***	0.492***	0.49***	0.486***
	(0.111)	(0.112)	(0.11)	(0.111)
Transparency (CORRUPTION)	-0.042	-0.0433	-0.0442	-0.0474
	(0.0306)	(0.0311)	(0.0305)	(0.0309)

Table 11- (Continued)

Hausman test	12.23	10.39	13.67	9.61
F test (heterogeneity of groups)	20.95***	18.62***	20.77***	18.5***
FF test (joint significance)	3.24***	2.15***	3.61***	2.48***
Number of countries	34	34	34	34
Number of observations	487	487	487	487

This table presents fixed effects estimation for the full sample of the 34 emerging markets over the 1987-2008 periods. In comparison with the list of countries presented in Table 3 above, Nigeria is dropped out because series on investment rate is unavailable. Côte d'Ivoire is also dropped out because of the absence on information about integrity. The dependent variable is Turnover ratio (TR variable). Privatization is proxied by either the total proportion of privatization through SIPs over the total number of privatizations (PO) or the ratio of proceeds from SIPs privatizations over the total proceeds from privatizations (SIP). Privatization variables crossed with regional dummies provide differentiated effect relating to regions Africa, Asia, Latin America and MENA. *Variable(-1)* means that the considered variable enters the model in a first lagged form.

Hausman test permits the choice in favour of fixed effects specifications. Rejection of the null hypothesis leads to the use of fixed effects model.

F test is conceived to check for heterogeneity between countries. Rejection of the null hypothesis confirms differences in the specific country effects.

FF test is conceived to check for the joint significance of all the coefficients after the fixed effects model is chosen.

Standard errors are reported in parentheses.

***, **, * indicate significance levels at 1%, 5%, and 10%, respectively.

Table 12- Fixed effects estimates of the impact of privatization on stock market development

Variables	Stock Market Development Index (SMINDEX)			
Privatization (TNP)	0.00433			
	(0.00345)			
Privatization (TNP(-1))	0.00186			
	(0.0035)			
TNP*AFRICA		0.00204		
		(0.0103)		
TNP*AFRICA(-1)		0.00344		
		(0.0104)		
TNP*ASIA		0.0024		
		(0.0061)		
TNP*ASIA(-1)		0.000373		
		(0.00619)		
TNP*LATINAMERICA		0.00908		
		(0.00707)		
TNP*LATINAMERICA(-1)		0.00219		
		(0.0071)		
TNP*MENA		0.00105		
		(0.00671)		
TNP*MENA(-1)		-0.000589		
		(0.0067)		
Privatization (PRIV)			4.734**	
			(1.991)	
Privatization (PRIV(-1))			4.314**	
			(1.981)	
PRIV*AFRICA				1.151
				(3.631)
PRIV*AFRICA(-1)				-2
				(3.553)
PRIV*ASIA				22.67***
				(5.867)
PRIV*ASIA(-1)				29.811***
				(6.0279)
PRIV*LATINAMERICA				4.633
				(3.318)
PRIV*LATINAMERICA(-1)				2.324
				(3.314)
PRIV*MENA				-2.184
				(3.528)
PRIV*MENA(-1)				-0.18
				(3.541)
Income (gGDPCAP(-1))	0.264	0.237	0.0186	0.172
	(0.779)	(0.786)	(0.776)	(0.749)
Investment (INVEST(-1))	2.699***	2.754***	2.817***	2.283***
	(0.728)	(0.744)	(0.724)	(0.699)
Financial intermediary (CREDIT)	0.0761	0.0639	0.0595	-0.0269
	(0.187)	(0.188)	(0.185)	(0.177)
Macroeconomic stability (INFLATION)	0.00137	0.00217	-0.000148	0.0012
	(0.0108)	(0.0109)	(0.0106)	(0.0102)
World business cycle (FFRATE)	-0.00914	-0.0111	-0.0119	-0.0055
	(0.0147)	(0.0152)	(0.0145)	(0.014)
Liberalization (LIB)	0.0344	0.0305	0.0268	0.0313
	(0.111)	(0.112)	(0.11)	(0.105)
Integrity (ITLAWS)	0.161	0.148	0.115	0.102
	(0.139)	(0.141)	(0.138)	(0.132)
Transparency (CORRUPTION)	0.0155	0.0145	0.0164	-0.00181
	(0.0387)	(0.0391)	(0.0381)	(0.0367)

Table 12- (Continued)

Hausman test	37.04***	20.42	16.23*	9.81
F test (heterogeneity of groups)	11.49***	10.99***	12.15***	11.15***
FF test (joint significance)	3***	1.96**	3.86***	5.58***
Number of countries	34	34	34	34
Number of observations	487	487	487	487

This table presents fixed effects estimation for the full sample of the 34 emerging markets over the 1987-2008 periods. In comparison with the list of countries presented in Table 3 above, Nigeria is dropped out because series on investment rate is unavailable. Côte d'Ivoire is also dropped out because of the absence on information about integrity. The dependent variable is the Stock Market Development Index (SMINDEX variable). Privatization is proxied by either the total number of privatizations per year (TNP) or the ratio of total proceeds from privatizations over GDP (PRIV). Privatization variables crossed with regional dummies provide differentiated effect relating to regions Africa, Asia, Latin America and MENA. *Variable(-1)* means that the considered variable enters the model in a first lagged form.

Hausman test permits the choice in favour of fixed effects specifications. Rejection of the null hypothesis leads to the use of fixed effects model.

F test is conceived to check for heterogeneity between countries. Rejection of the null hypothesis confirms differences in the specific country effects.

FF test is conceived to check for the joint significance of all the coefficients after the fixed effects model is chosen.

Standard errors are reported in parentheses.

***, **, * indicate significance levels at 1%, 5%, and 10%, respectively.

Table 13- Fixed effects estimates of the impact of privatization on stock market development

Variables	Stock Market Development Index (SMINDEX)			
Privatization (PO)	0.0789			
	(0.0743)			
Privatization (PO(-1))	0.0278			
	(0.0728)			
PO*AFRICA		0.0306		
		(0.167)		
PO*AFRICA(-1)		0.0626		
		(0.167)		
PO*ASIA		0.15		
		(0.11)		
PO*ASIA(-1)		-0.022		
		(0.109)		
PO*LATINAMERICA		0.18		
		(0.201)		
PO*LATINAMERICA(-1)		0.168		
		(0.199)		
PO*MENA		-0.104		
		(0.163)		
PO*MENA(-1)		0.00208		
		(0.153)		
Privatization (SIP)			0.101	
			(0.0658)	
Privatization (SIP(-1))			0.0915	
			(0.0653)	
SIP*AFRICA				0.0392
				(0.152)
SIP*AFRICA(-1)				0.0849
				(0.157)
SIP*ASIA				0.211**
				(0.103)
SIP*ASIA(-1)				0.078
				(0.103)
SIP*LATINAMERICA				0.143
				(0.156)
SIP*LATINAMERICA(-1)				0.129
				(0.152)
SIP*MENA				-0.0837
				(0.14)
SIP*MENA(-1)				0.0895
				(0.135)
Income (gGDPCAP(-1))	0.365	0.379	0.333	0.322
	(0.777)	(0.783)	(0.774)	(0.779)
Investment (INVEST(-1))	2.793***	2.793***	2.844***	2.837***
	(0.733)	(0.739)	(0.729)	(0.733)
Financial intermediary (CREDIT)	0.0745	0.0667	0.0786	0.0806
	(0.187)	(0.188)	(0.186)	(0.188)
Macroeconomic stability (INFLATION)	0.0000649	-0.000233	0.000387	0.000458
	(0.0107)	(0.0108)	(0.0107)	(0.0108)
World business cycle (FFRATE)	-0.00782	-0.00726	-0.00755	-0.00565
	(0.0147)	(0.0148)	(0.0146)	(0.0147)
Liberalization (LIB)	0.0482	0.0424	0.0534	0.0553
	(0.111)	(0.112)	(0.111)	(0.111)
Integrity (ITLAWS)	0.155	0.144	0.151	0.142
	(0.139)	(0.141)	(0.139)	(0.14)
Transparency (CORRUPTION)	0.0198	0.019	0.0177	0.0132
	(0.0386)	(0.0391)	(0.0384)	(0.039)

Table 13- (Continued)

Hausman test	21.44**	20.19	10.92	22.33
F test (heterogeneity of groups)	11.51***	11***	11.5***	10.82***
FF test (joint significance)	2.84***	1.95**	3.2***	2.19***
Number of countries	34	34	34	34
Number of observations	487	487	487	487

This table presents fixed effects estimation for the full sample of the 34 emerging markets over the 1987-2008 periods. In comparison with the list of countries presented in Table 3 above, Nigeria is dropped out because series on investment rate is unavailable. Côte d'Ivoire is also dropped out because of the absence on information about integrity. The dependent variable is the Stock Market Development Index (SMINDEX). Privatization is proxied by either the total proportion of privatization through SIPs over the total number of privatizations (PO) or the ratio of proceeds from SIPs privatizations over the total proceeds from privatizations (SIP). Privatization variables crossed with regional dummies provide differentiated effect relating to regions Africa, Asia, Latin America and MENA. *Variable(-1)* means that the considered variable enters the model in a first lagged form.

Hausman test permits the choice in favour of fixed effects specifications. Rejection of the null hypothesis leads to the use of fixed effects model.

F test is conceived to check for heterogeneity between countries. Rejection of the null hypothesis confirms differences in the specific country effects.

FF test is conceived to check for the joint significance of all the coefficients after the fixed effects model is chosen.

Standard errors are reported in parentheses.

***, **, * indicate significance levels at 1%, 5%, and 10%, respectively.

4. The impacts of privatization on inequality

4.1. Theoretical and empirical background

4.1.1. Literature review

Although the record of privatization is generally positive, the reform has often been accompanied by opposition and social unrest. There is a widespread public perception that privatization is the main cause of the large increases in unemployment in many regions in the last decade and thus an important contributor to a number of social ills (i.e., increased poverty and inequality). Many criticize its social utility as it is perceived to favour the richest, the foreign and those more corrupt. This criticism is nourished by the perception that workers and customers pay for this reform by losing their jobs and by facing increased prices. Privatization is therefore often seen as increasing poverty and inequality. These criticisms have been more acute in infrastructure and utilities' privatizations in general. An important number of studies have shown that privatization has contributed to general unemployment levels, but only slightly (Barja and Urquiola, 2001; Ennis and Pinto, 2002; López-Calva and Rosellón, 2003). However, these studies have focused on Latin America region, and it remains to be seen whether its conclusions could be generalized. Using firm-level data, Boubakri and Cosset (1998) show that the number of employees in 79 newly privatized firms from developing countries has increased significantly from before to after privatization, whether the analysis is in absolute terms or relative to the market.

Studies on other regions such as Africa, Asia or MENA are still scare, and when they exist, they rather suggest a more nuanced picture and tend to be rather nuanced about the potential social impacts of privatization in terms of inequality or unemployment. The literature on the impact of privatization on inequality and poverty fails however to provide support to these claims. An important contribution to the literature came from the Galal et al.'s (1994) study on the welfare effects of privatization in four countries. The authors show that welfare was improved in three out of four cases, and workers did not overall loose from the process. Although several studies, as discussed above, show that privatization is often preceded by restructuring that mainly affect employees, the quantitative effects of privatization have not, or rarely, been assessed. One notable exception is the recent paper by McKenzie and Mookherjee

(2005) in which the authors examine the distributional impact of the change in ownership for infrastructure projects in Latin American countries. They show that although privatization led to an increase in the country unemployment level, it had very little impact on income inequality measured by the Gini coefficient, compared before to after privatization. These results may however pertain only to the experience of Latin American countries. Privatization has a dynamic of its own from one region to another and from one country to another, as the economic, institutional and political environments which condition privatization differ. There are little indications in the literature as to whether this evidence is transferable elsewhere.

In order to determine the social welfare impact of privatization, researchers generally use concepts from the welfare economics literature, and techniques drawn from social cost-benefit analysis (Nellis, 2006). For instance, instead of examining whether the welfare of a given economic agent has improved or worsened due to the privatization reform, the question is more complex as the impact of privatization needs to be assessed on the economy as a whole, including the general government, workers, consumers, and competitors. Once these gains/losses are assessed for these actors, one can estimate the total loss or gain from the reform and calculate its overall impact.

In order to answer this question, one would typically need to construct a counterfactual scenario as in Galal et al. (1994). In other words, we need to ask what would have happened if privatization did not occur, and the firm remained under state ownership. The construction of the counterfactual is embedded with uncertainties and makes the task very difficult, hence the lack of available evidence on this issue.

Using a simpler approach to analyze the social impact of state divestiture, the scarce available studies assess whether the ownership change of former SOEs led to changes or shifts in the distribution of welfare of different income groups. Theoretically, Nellis and Shirley (1992) provide some guidance into this issue and identify several channels through which we expect privatization to affect income distribution:

Pricing: Privatization shifts an asset owned (in theory) by the taxpayers to one owned by private persons or investors. Whether this shift in ownership reduces or increases overall equity in a society will depend for starters on the price received by the selling state, and whether it adequately reflects the underlying value of the asset. In the long-run, the effect of

privatization will ultimately depend on both the initial price and the post-privatization stream of cash flows generated by the firm.

Labor: Privatization can change the return on assets, such as labour, so that it affects the distribution of income. In the short-term, low-income workers are usually those more likely to be targeted during restructuring. Conversely, in the long-term, privatization will eventually lead to higher growth and generate new jobs expansion that offset job lay-offs.

Prices of goods and access to services: Privatization can affect prices differentially across income groups. In potentially competitive sectors, privatization generally leads to more competition, and the new private owner will set their prices according to competition, and offer lower prices. In strategic sectors and infrastructure projects, prices are below the marginal cost under state ownership. Once privatized, if there is no regulation and once subsidies are cut, these firms are more likely to increase their prices.

More recently, Nellis (2006) concurs and sustains that privatization may have a negative impact on inequality and poverty via two channels: one is the employment channel and the second is the rapid increase in prices. For instance, Nellis (2006) reports few examples of the extent of job losses in state-owned firms across countries after the switch to private ownership: 150,000 in Argentina between 1987 and 1997; 50% of all employees in newly privatized firms in Mexico in the 1990s; job losses of more than 90,000 employees in the newly privatized Brazilian railways; and a reduction of 15% of the Nicaragua's total labor force due to privatization. Other recent surveys add to this grim picture. For instance, Chong and López-de-Silanes (2002) show that worldwide, on average, 80% of the surveyed firms decrease the number of employees after the sale. Another study by Van der Hoeven and Sziracki (1997) found job losses in 7 out of the 17 cases reviewed (averaging 44%), found no changes in 6 cases and found overall increases in the number of employees in 4 cases.

Most researchers however sustain that job losses are especially prevalent in large banking or utility privatization. Those firms in more competitive sectors have experienced less job losses. Some even argue that in most cases the downsizing that follows privatization is part of the restructuring, and is in fact temporary as firms are expected to rebound and grow in the future, thus creating an increased demand for labor.

The second channel through which privatization may add to income inequality is through the increase of prices for essential goods and services that follow privatization of public utilities such as water, sewerage, electricity and transport. Before privatization, these prices are set at "lower levels than cost covering levels, resulting in scarcity, rationing and lack of investment and expansion capital" (Nellis, 2006). After privatization, price hikes thus become necessary, especially that the newly privatized utilities do not usually benefit from government subsidies any more. In some cases however, these price increases were excessive (case of water privatization in Bolivia that pushed the prices up 34%).

As discussed above however, the results of available studies are mixed and do not provide unconditional support to the expectation that privatization has a detrimental effect on income inequality and unemployment. McKenzie and Mookherjee (2005) for instance examine the distributional impact of 10 infrastructure privatizations in Latin America (i.e., Argentina, Bolivia, Mexico and Nicaragua) and find an insignificant increase in the general unemployment levels post privatization. They also find that privatization had a very small effect on income equality and that, in fact, it did not affect poverty in the worst cases, but rather reduced it. A potential explanation is that the number of private sector jobs created by the general reform program soon exceeded the number dismissed (McKenzie and Mookherjee, 2005).

A study by the World Bank (2008) on Sub-Saharan African privatizations focused on four countries, and on the impact of privatization on consumers, workers, the government, and owners. The results show that in none of the cases reviewed in the study did consumers lose. The access to investment capital after privatization led to more expanded coverage and price increases were very moderate. Results for workers were mixed depending on whether employment and wages increased or not after privatization. The main conclusion of the study is that there were overall substantial welfare gains after divestiture. The same appears in Birdsall and Nellis (2002) who conclude that "most privatization programs have, at least in the short run, worsened the distribution of assets (very likely) and income (likely)".

In summary, these channels suggest that privatization effects on employment and economic inequality are long-run in nature. *We hypothesize that privatization has an impact on income inequality and employment through the channels identified above*. Specifically, we sustain that privatization effects on employment and economic inequality are long-run in

nature. Indeed, the decrease in the number of employees at the time of privatization is often offset by an increase in job creations by the new owners after privatization. Once submitted to the forces of competition, the firms will strive to survive, and with the new capital infusion of new owners, new jobs are created. Similarly, a long-run effect also comes from the elimination of subsidies to the former SOEs, and increased tax revenues from these firms once they turn profitable. This leads to more government revenues, a higher investment rate in the economy, and hence more job creation.

4.1.2. Main hypotheses to be tested

The impact of privatization on the society at large may depend on several factors, such as the method of privatization and the type of new investors involved in the firm. Similarly, privatization effects on the distribution of wealth may depend on other reforms implemented at the same time as privatization, such as for instance liberalization. However, everything else being equal, we posit the following general hypothesis:

H1: Privatization is likely to have a negative effect on employment, all else being equal.
H2: Privatization is likely to have a negative impact on income inequality, all else being equal.

4.2. Econometric modeling

4.2.1. Sample and data description

In conformity with the theoretical background presented in the previous section, the econometric modeling in this section aims essentially at assessing the impact of privatization (via its different indicators) on two main variables, namely unemployment and inequality. Consequently, unemployment is measured by the rate of unemployment in percentage (UNEMP), and inequality is proxied by the Gini coefficient (GINI). The Gini coefficient is a widely used measure of distribution inequality. It is defined as the ratio of the area between the line of equal distribution and the observed Lorenz Curve to the area under the uniform distribution, and has values within the range 0 (perfectly uniform distribution) to 1 (complete inequality). In an equivalent representation, the Gini index is the Gini coefficient expressed as a percentage, and is equal to the Gini coefficient multiplied by 100 (see Groves-Kirkby et al., 2009). It is worth noting that the Gini coefficient has many advantages. Indeed, it is a

measure of inequality, not a measure of average income or some other variable which is unrepresentative of most of the population, such as GDP. The Gini coefficient can also be used to compare income distributions across different population sectors as well as countries. For example, the Gini coefficient for urban areas differs from that of rural areas in many countries. In terms of calculations, the Gini coefficient is sufficiently simple that it can be compared across countries and be easily interpreted.[17]

The Gini coefficient can be used to indicate how the distribution of income has changed within a country over a period of time, thus it is possible to see if inequality is increasing or decreasing. Finally, the Gini coefficient satisfies four important principles: (i) *Anonymity*: it does not matter who the high and low earners are; (ii) *Scale independence*: it does not consider the size of the economy, the way it is measured, or whether it is a rich or poor country on average; (iii) *Population independence*: it does not matter how large the population of the country is; (iv) *Transfer principle*: if income (less than the difference) is transferred from a rich person to a poor person the resulting distribution is more equal. Besides, since data on the Gini coefficient and the unemployment rate are not available for the same countries sample, the econometric estimates will concern different countries samples according to data availability. Therefore, the empirical study will include a panel of 36 countries from Africa, Asia, Europe, Latin America and the MENA region as shown in Table 14 when it will be question of assessing the impacts of privatization on inequality and 38 countries when the dependent variable is UNEMP (see Table 15).[18] These countries have engaged in varying degrees extensive programs of privatization during the period covered by the study. The panel is unbalanced since no uniform time span is available for all the countries in the panel. The period concerned by the study goes globally from 1987 through 2008. The two dependent variables UNEMP and GINI come from World Development Indicators database (WDI).

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[17] GDP statistics are often criticized as they do not represent changes for the whole population. The Gini coefficient demonstrates how income has changed for poor and rich. If the Gini coefficient is rising as well as GDP, poverty may not be improving for the vast majority of the population.

[18] It is worth noting that Europe has been included in the empirical study relative to the impacts of privatization on employment and inequality. According to our knowledge, no single study has been published on this issue that cover also Europe. Thus, including Europe in our sample will render the inference more robust, and will permit to appraise more accurately the distributional effects of privatization when it comes to regions enjoying different institutional environments and different degrees of development.

Table 14-List of countries

Africa	Asia	Europe	Latin America	MENA
Côte d'Ivoire [1991-2000]	China [1991-2007]	Belgium [1988-2008]	Argentina [1988-2006]	Egypt [1993-2007]
Nigeria [1989-2007]	Indonesia [1991-2008]	France [1988-2008]	Brazil [1988-2008]	Morocco [1993-2008]
South Africa [1989-2007]	Malaysia [1988-2008]	Germany [1988-2008]	Chile [1988-2006]	Tunisia [1988-2008]
Zambia [1993-2000]	Pakistan [1990-2008]	Ireland [1988-2008]	Colombia [1988-2007]	Turkey [1988-2008]
	Philippines [1987-2008]	Italy [1988-2008]	Jamaica [1988-2002]	
	Singapore [1990-2007]	Portugal [1988-2008]	Mexico [1988-2008]	
	Sri Lanka [1989-2007]	Russia [1988-2008]	Peru [1991-2007]	
	South Korea [1991-2008]	Spain [1988-2008]	Nicaragua [1990-2003]	
	Thailand [1988-2007]	Switzerland [1988-2008]	Venezeuala [1989-1999]	
		UK [1988-2008]		

Time span for each country corresponds to availability of observations relating to variables which indicate a measure of privatization as well as the dependent variable, namely the Gini coefficient (GINI).

Table 15- List of countries

Africa	Asia	Europe	Latin America	MENA
Côte d'Ivoire [1991-2000]	India [1991-2000]	France [1988-2000]	Argentina [1988-2000]	Egypt [1993-2000]
Ghana [1989-2000]	Indonesia [1991-2000]	Germany [1988-2000]	Brazil [1988-2000]	Jordan [1995-2000]
Nigeria [1989-2000]	Malaysia [1988-2000]	Ireland [1988-2000]	Chile [1988-2000]	Morocco [1993-2000]
South Africa [1989-2000]	Pakistan [1990-2000]	Italy [1988-2000]	Colombia [1988-2000]	Tunisia [1988-2000]
Uganda [1992-2000]	Philippines [1989-2000]	Portugal [1988-2000]	Guatemala [1989-1990]	Turkey [1988-2000]
Zambia [1993-2000]	Singapore [1990-2000]	Spain [1988-2000]	Jamaica [1988-2000]	
Zimbabwe [1994-2000]	Sri Lanka [1989-2000]	Switzerland [1988-2000]	Mexico [1988-2000]	
	Thailand [1988-2000]	UK [1988-2000]	Nicaragua [1990-2000]	
			Peru [1991-2000]	
			Venezuela [1989-1990]	

Time span for each country corresponds to availability of observations relating to variables which indicate a measure of privatization as well as to the dependent variable, namely the unemployment rate (UNEMP).

Regarding privatization indicators, the same proxies developed in the study of the impact on the stock market development will be used.[19] They are TNP and PRIV variables which indicate the effect of the privatization effort, and PO and SIP variables to reflect the impact of the method of privatization. All these indicators of privatization are expected to have at least a short-run negative impact on employment and inequality. Since we consider the rate of unemployment as dependent variable, the coefficient associated to each privatization variable has to be positive while these coefficients have to be negative when the Gini coefficient plays the role of dependent variable. Estimation could be run over the whole sample, but heterogeneity among regions could be detected after creating dummy variables for the five regions and crossing them with privatization variables.

A sound analysis of the potential impact of privatization on employment and inequality should account for the effects of the economic environment and the role of institutions. Consequently, some macroeconomic and institutional variables, in addition to privatization variables, have been included in the set of the control variables. As for the macroeconomic variables, a set composed by seven variables is retained. Since the economic theory (Okun's law) stipulates that there is a negative relationship between growth and the rate of unemployment, a variable that stands for the economic growth is retained. Many proxies for economic growth might be included in the regression. Real GDP growth (RGDPG) and the annual growth of real per capita GDP (gGDPCAP) are the most often used proxies. These variables are expected to exhibit a negative effect on unemployment since they reflect the dynamics of the business cycle. When income increases, its cyclical component should have a positive incidence on the labour market. On the other hand, higher income means better level of education, better business environment and wealthy citizens. The effects of the business cycle dynamics on inequality are however rather ill known. For this reason, the expected sign of the variable RGDPG considered in the inequality regression can be either positive or negative.

Likewise, the economic theory learns that investment is the most important determinant of employment. It also stipulates that the correlation among them is positive. The aggregate

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[19] See Paragraph 3.2.1. above.

investment variable we consider in the empirical estimates, named INVEST, is proxied by the gross fixed capital formation divided by GDP. Thus, the sign of the coefficient associated to INVEST variable is expected to be negative when it is question of explaining the dynamics of the unemployment rate (UNEMP) and inequality as measured by the Gini coefficient.

The relationship between income inequality and savings has been questioned in many studies. Using with a world sample countries, Li and Zou (2004) provide evidence that the gross national (or private) savings rate and the Gini coefficient are negatively and significantly linked. This finding is in line with the negative relationship between inequality and economic growth found by Alesina and Rodrik (1994), and Persson and Tabellini (1994). However, this finding does not seem to be very robust, in particular, with the regional sub samples. For instance, Schmidt-Hebbel and Serven (1996) have shown that it depends on income distribution indicators as well as functional forms. Thus, it is judicious to control for savings when investigating the impacts of privatization. To this end, we use as a proxy for savings which is the ratio of savings to GDP, named SAVINGS. We expected the sign of the coefficient to savings to be either positive or negative in both cases (for inequality and unemployment regressions). As for the linkage between savings and employment, economic theory stipulates that it is positive. Therefore, we expect that the sign associated to SAVINGS variable is negative.

The literature on financial development has shown that there is a significant linkage between the degree of financial development and inequality. The degree of financial development is often proxied by the ratio of domestic credit to private sector over GDP. This variable is named CREDIT. For instance, Batuo et al. (2010) provide evidence that financial development, as proxied by the ratio of domestic credit to private sector over GDP, is negatively linked to the Gini coefficient. Using a large countries panel, the authors found that an increase in the credit ratio by 1% induces a decrease in the Gini coefficient by 0.1 point in percentage. Consequently, the role of financial development will be accounted for in our regressions, and we will control for the effects of the CREDIT variable. CREDIT is expected to bear a negative sign when the dependent variable is either the Gini coefficient or the rate of unemployment.

There is a wide consensus among economists that inflation plays an important role in macroeconomic stability. Inflation shapes private economic agents' (investors and consumers)

expectations. According to the Phillips curve, relationship between the rate of unemployment and the rate of inflation in an economy is an inverse one. In other words, the economic theory stipulates that the lower the unemployment in an economy, the higher the rate of inflation. Again, there is a wide consensus among economists that high inflation reduces employment (or alternatively increases the unemployment rate), and thereby the correlation between inflation and employment (unemployment) is expected to be negative (positive). Theoretical studies on the linkage between inequality and inflation are scarce. However, cross-country empirical evidence on inflation and income inequality suggests that they are positively related.[20] The inflation variable, named INFLATION, that will be controlled for in our regressions is generated as the growth rate of the consumer price index. We have computed inflation in this way because data on the consumer price index are available for all the countries. Thus, one may expect the sign of the coefficient to inflation in the regression estimates to be rather negative.

Debt has been found to be an important determinant of inequality as well as employment. For instance, Hanka (1998) finds a positive relationship between debt and employment reductions; and Sharpe (1994) reports a statistically and economically significant relationship between a firm's leverage and the cyclicality of its work force. The debt variable is proxied in our case by the outstanding of debt deflated by the GDP (it is named DEBT). The sign of the coefficient associated to DEBT variable is expected to be positive in both equations (with GINI or UNEMP as dependent variables).

The degree of integration of a country may explain to some extent its records in terms of unemployment and inequality. The degree of openness, named OPENN, is proxied by the sum of imports and exports over GDP. OPENN is thought to be an important variable that boosts growth and employment. Economists agree that the relationship between openness and employment is positive. As for inequality, there is indeed a wide consensus among economists that increases in the openness of a country to international flows of goods and services, factors of production, and technology can significantly affect inequalities in income between individuals. However, channels through which these effects propagate are still an open question; and, the rare empirical studies on this issue are rather inconclusive.[21] For instance, using aggregate measures of overall inequality (such as Gini coefficient or the share

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[20] See, among others, Al-Marhubi (1997), Romer and Romer (1999), and Albanesi (2007).
[21] See Anderson (2005).

of the poorest 20% in national income), and using Deininger and Squire (1996) dataset, Barro (2000) and Lundberg and Squire (2003) find evidence that openness impacts significantly and positively on inequality as measured by the Gini index. However, Higins and Williamson (1999), Ravillon (2001), and Dollar and Kraay (2002) using a different dataset and controlling for different variables show that openness does impact on inequality (as measured by the Gini coefficient). Consequently, the coefficient to OPENN variable is expected to be either nil or positive when it comes to explaining inequality and negative when explaining the unemployment rate. All the macroeconomic variables come from World Development Indicators database (WDI).

As for the institutional variables set, it consists of the following variables. A variable named LIB is considered to account for the impact of the liberalization of financial markets. A variable corruption is included in the set of the institutional variables. The variables LIB and CORRUPTION are the same as the ones used before.[22] As far as corruption is concerned, Gupta et al. (1989) show that it has distributional effects. More specifically, the authors argue that corruption increases income inequality mostly through lower economic growth and biased tax system thereby favoring rich. According to these authors, corruption increases inequality by lowering social spending and favoring policies that are responsible for inequality in assets ownerships. The empirical evidence put forward by Gupta et al. (1989) shows that a worsening in the corruption index of a country by one standard deviation is associated with the same increase in the Gini coefficient as a reduction in average secondary schooling of 2.3 years. These results seem robust to different corruption indexes and also when controlling for other macroeconomic variables (Gupta et al., 1989, p.16). Likewise, corruption is deemed to impact significantly the employment dynamics. Corruption has been found to hamper employment growth (increase unemployment) in small, medium and large firms (Aterido et al., 2007). According to the empirical evidence presented by Aterido et al. (2007), an increase in the incidence of bribes of 10 percentage points reduces the employment rate of large firms by approximately 1.4 points, and increases the growth rate of micro firms by 1.4%. In sum, the expected sign of the coefficient associated to corruption is positive in both regressions.

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[22] See paragraph 3.2.1.

The third institutional variable that has been included in the regressions is a measure of institutional quality, named IQ, which is a composite index. Institutional quality is measured through an index constructed as the average of four indices reported by the International Country Risk Guide (ICRG). The indices are (i) corruption indicating the degree of all forms of corruption such as patronage, nepotism, and suspiciously close ties between politics and business; (ii) rule of law which is the strength and impartiality of the legal system and the extent of popular observance of the law; (iii) bureaucracy quality which indicates the strength and expertise of the bureaucracy to govern without drastic changes in policy or interruptions in government services; and (iv) government stability to represent the ability of the government to carry out its declared program and to stay in office. The indices are re-scaled from 1 to 12, where high values indicate good institutions. Thus, IQ index ranges from 1 to 12. The empirical studies on the linkage between institutional quality and employment/unemployment are scarce, and most often not conclusive. However, some rare studies (Rodrik et al., 2002; Rodrik, 2003) have noticed a positive correlation between institutional quality and growth. Thus, in the light of these findings, the expected sign of the correlations between IQ and inequality on the one hand and between IQ and unemployment on the other is rather negative.

Finally, legal origin variable (LO) has been included in the models. It has been proved in the economic literature that legal origin (LO) could be an important factor for explaining variables such as growth and investment. One may expect also that legal origin impacts on social variables such as unemployment rate or inequality (Gini coefficient). The basic idea behind including such variable in our models is that countries' regulations may affect the way privatization impacts on inequality or/and employment.

4.2.2. Descriptive statistics

Table 16 provides the average levels of the unemployment rate and the Gini coefficient for the five geographical regions namely Africa, Asia, Europe, Latin America and MENA. The basic idea behind subdividing the full sample countries into different regions is to highlight the performances of these five regions, and to compare MENA countries' performances to those of the other regions. It stands out from Table 16 that there are sharp dissimilarities between regions en terms of unemployment records. The worst score is recorded in Africa (21.34%) whilst the best one is recorded in Asia (5.9%). As far as MENA

region is concerned, it records an average unemployment rate of 11.36% above the rate observed for the full sample (9.075%).

Table 16- Description of regional disparities in inequality and unemployment

	Africa	Asia	Europe	Latin America	MENA	Full Sample
Unemployment rate (UNEMP)	21.346	5.907	8.89	8.857	11.369	9.075
Number of observations	27	170	192	152	63	504
Gini coefficient (GINI)	45.73	39.091	33.135	49.981	39.47	41.956
Number of observations	70	93	99	124	48	434

This table presents the yearly means of the unemployment rate over the period 1987-2008 and the Gini coefficient over the period 1988-2000 for the five considered regions in the sample as well as for the full sample.

As for inequality, Table 16 indicates that income disparity varies significantly from one region to another ranging from 33.135% in Europe to almost 50% in Latin America. This latter region seems to record the highest Gini coefficient among the five regions, which implies that income disparity, is the most severe in Latin American countries. The full sample average income disparity is 41.95%. Incontestably, Europe has the least record in terms of disparity; it has a Gini coefficient of 33.13%. As surprising as it may be, MENA region records the same income disparity as Asia, almost 39%, a value superior to the average full sample coefficient.

Table 17 presents the annual average levels for the explanatory variables in the model for the full sample and according to the subdivision into five regions. The average total number of privatizations is more important in MENA region with about 7 transactions per year over the period of observations exceeding the average level for the full sample (i.e., one transaction per year). Latin America is also above the mean level observed for the full sample (6.415) which indicates a concentration in the effort of privatization over a short period of time than in the other regions especially in Africa (4.86). Figures obtained for the proportion of proceeds from privatizations over GDP (PRIV) corroborate what we found for the TNP variable.

MENA region leads with an amount of proceeds from privatization counting for near 1% of GDP during the period of study. The other regions record proportions above the mean level observed for the full sample except for Asian countries (0.42%). When we look at the method of privatization (either PO variable or SIP variable, respectively), MENA countries

remain also slightly over the average values recorded for the whole sample. A higher proportion of transactions were conducted through share issues in Asian countries that lead the sample because their stock markets are more developed than those of the other regions (37.6% for PO, and 41.3% for SIP). African countries with the least developed stock markets record proportions short of the mean value for the whole sample (22.9% for PO, and 23.8% for SIP). Latin American stock markets record weaker proportions (11.3% for PO, and 14.8% for SIP) because these countries choose usually direct selling of SOEs to a strategic investor

Table 17- Descriptive statistics

	Africa	Asia	Latin America	Europe	MENA	Full sample
Privatization (TNP)	4.86	5.689	6.415	11.692	7.0303	5.922
Privatization (PRIV)	0.00677	0.00423	0.00807	0.0042	0.00962	0.0068
Privatization (PO)	0.229	0.376	0.113	0.967	0.291	0.255
Privatization (SIP)	0.238	0.413	0.148	0.307	0.374	0.038
Income (RGDPG)	0.025	0.059	0.0186	0.024	0.043	0.038
Investment (INVEST)	0.153	0.277	0.207	0.216	0.232	0.231
Financial development (CREDIT)	0.634	0.745	0.317	0.964	0.460	0.672
Macroeconomic Stability (INFLATION)	0.182	0.0636	1.205	0.113	0.188	0.387
Savings (SAVINGS)	0.167	0.303	0.207	0.235	0.194	0.233
Public debt (DEBT)	1.467	0.697	0.631	0.642	0.563	0.667
External shocks (OPENN)	0.60	0.99	0.46	1.20	0.638	0.869
Financial Liberalization (LIB)	0.439	0.953	0.792	1.000	0.890	0.890
Legal Origin (LO)	2.738	4.113	3.035	5.134	4.342	3.994
Institutional Quality (IQ)	8.35	8.93	8.25	12.71	9.054	9.994
Corruption (CORRUPTION)	3.314	2.82	2.832	4.183	2.635	3.306
Number of observations	41	170	158	205	73	647

This table presents the yearly means, calculated over the period 1987-2008, of the considered explanatory variables for each region in the sample as well as for the full sample.

A quick look at Table 17 allows concluding that MENA region exhibits good performance in terms of growth and public debt as well as investment. For instance, the average level of growth in MENA region is greater than that recorded for the full countries sample. Likewise, the MENA region seems record a mean level of investment almost equal to that of the full countries sample, albeit less than that recorded in ASIA region (23% versus 27%). On the institutional plan, the corruption index ranks MENA region (2.635) below the mean full sample; likewise, the institutional quality index (IQ) ranks MENA below the mean full sample, but above Africa, Asia and Latin America. This means that the quality of institutions in MENA countries is better on average than that of other regions but Europe. It is worth reminding that IQ ranges from 1 (for bad institutional quality) to 12 (for good institutional quality).

4.2.3. The model

In what follows, we briefly review some methodological issues, including model selection and variable definition. In view of the lack of consensus on a unique measure of privatization, a challenge for any econometrician is to select the most appropriate proxy for privatization while avoiding misspecification of the model. To tackle this concern, we have recourse to the general-to-specific model selection approach within a dynamic panel data modeling. The general srructure of the econometric model is defined as follows:

$$y_{i,t} = \alpha_i + \rho y_{i,t-1} + \beta_0 * privatization_{i,t} + \beta_1 * privatization_{i,t-1} +$$

$$\gamma' * macroeconomic_{i,t} + \theta' institution_{i,t} + \varepsilon_{i,t} \qquad (6)$$

where countries are denoted i (i = 1 ,…, N), and t (t = 1 ,…, T_i) indicates the time observation for each variable. T_i is the number of time periods available for each country i. The dependent variable **y** stands for either the unemployment rate (UNEMP) or the Gini index (GINI). The variables UNEMP and GINI are taken to be the proxies for the social stand; as such, they permit to assess the social impacts of privatization. As in equation (2), the variable *privatization* is one of the four indicators of privatization defined above. *macroeconomic* and *institution* are two vectors which include a set of macroeconomic and institutional explanatory variables, respectively. Likewise, except the parameter ρ which stands for the feedback effect, all the remaining parameters are the same as those reported in equation (2). ε is the white noise error term. It is worth noting that the variable *privatization* has been included in its contemporaneous as well as lagged form. The social impact of privatization is unlikely to occur within the year. We conjecture that the effects will then take more than one year to propagate and to impact employment and inequality. The rationale behind this specification with a lagged dependent variable is that it allows for privatization persistence effects, and allows correcting for residual autocorrelation present in static panel data.

The parameters of the model have to be estimated through the Generalized Method of Moments (GMM). Given the available data, the treatment of incomplete panels is imperative. Indeed, the available panel dataset we consider is unbalanced since each variable is observed over different time length. The dynamic structure provided in the econometric specification

(6) leads to more efficient and consistent estimators given through GMM methodology. This technique, developed essentially by Arellano and Bond (1991), is frequently employed in the context of dynamic panels. It provides convergent estimators and derives from the instrumental variables principles. It also makes up for problems of correlation between the lagged dependent variable included in the vector of explanatory variables and the error term $\varepsilon_{i,t}$ as well as between some explanatory variables and the unobserved country-specific term.

Consistency of GMM estimator depends on the validity of the instruments. To address the issue, we consider two specification tests suggested by Arellano and Bond (1991), Arellano and Bover (1995), and Blundell and Bond (1998). The first is the Sargan test of over-identifying restrictions, which tests the overall validity of the instruments. Under, the null hypothesis of the validity of the instruments, the statistic associated with this test has a chi-squared distribution with (J-K) degrees of freedom where J is the number of instruments and K the number of the independent variables in the regression. The second test examines the assumption of no serial correlation in error terms. We test whether the differenced error term is second-order serially correlated. Under the null hypothesis of no second-order correlation, the statistic associated with this test has a standard normal distribution. Failure to reject the null hypotheses of both tests confirms the validity of our specifications.

Besides, because of the large number of independent variables, we follow a downward piecewise procedure in pairing down the suggested specification. This procedure permits to avoid omitted variables. The high number of the independent variables is likely to render the variance-covariance matrix instable because of the high degree of multicollinearity among the potential explanatory variables (either the institutional or the macroeconomic variables). The conditional index is calculated to check for multicollinearity (Belsley et al., 1980) in all the specifications. In addition, variables with high Variance Inflation Factors (VIF) are progressively dropped from the basic regression equation. To do so, we use the VIF test (Judge et al., 1988). This test consists in computing the following statistics $VIF_i = \left(1 - R_{ik}^2\right)^{-1}$ where R_{ik}^2 is the coefficient of determination issued from regressing the X_i variables on k other variables. If R_{ik}^2 is very close to one, or equivalently if VIF_i approaches the infinity, this indicates a perfect multicolinearity among the variables of interest. In practice, variables with VIF typically greater than ten are excluded.

4.3. Empirical findings and comments

In what follows, we report and comment the empirical results obtained when running the regression models. Tables 18 to 21 report the results of the system GMM estimates of the different specifications accounting for the different measures of privatization (TNP, PRIV, SIP and PO) with unemployment rate (UNEMP) as the dependent variable. Each table contains four columns relative to four different specifications. The first column reports the empirical results when the contemporaneously (but not lagged) measure of privatization is included. The second one reports the empirical results when the lagged measure of privatization is included in the model. The third and the fourth columns report the estimation results when the regional effects are accounted for. Five regions are considered, and consequently five first-order interaction terms were generated and included in the model to generate the specific effect of privatization relating to each geographical region. They are defined in a similar manner as in the study discussed above about the relationship between privatization and stock market development. We add just the specific effect of European countries. The same set of these variables has been also considered in its one year lagged form. The basic idea behind including these interaction terms is to figure out whether privatization impacts on unemployment according to regions or not, and whether this (hypothetical) impact is contemporaneously or not. It is worth noting that, in all the specifications ((1) to (4) in Tables 18 to 21), we control for two groups of variables, namely macroeconomic variables and institutional variables. These two sets of variables are in principle the same for all the specifications. However, it happens that some of them are dropped because of multicollinearity (numerical) problems. After controlling for the endogeneity of all explanatory variables, it has been found that the Sargan test and the serial correlation test do not detect any problem with instrument validity. The coefficients on lagged dependent variable are positive and significant in all the specifications corroborating thereby the persistence of unemployment and the use of system GMM methodology. The impact of privatization on unemployment depends on the type of privatization measures used, on the region and on the time effect.

When the total number of privatization (TNP variable) is used, the results reported on Table 18 indicate that privatization has not a concomitant effect on unemployment but instead a negative and significant lagged impact. This means that the higher the number of privatizations is in a year the lower the unemployment rate will be in the next year. A close

inspection of the impacts by region tends to indicate that only in Europe the number of privatizations brings about an increase in the unemployment rate which is at odds with the results on the TNP variable where a positive and non significant impact is found. Again, the lagged regional impacts of privatization tend to confirm this finding. Indeed, the results of column (4) indicate that the number of privatizations decreases the unemployment rate across all the regions but Europe, albeit these estimates are not statistically significant.

When the privatization proceeds (PRIV variable) is introduced in the model, columns (1) and (2) of Table 20 show that the variable PRIV bears a negative sign indicating that privatization receipts impacts negatively on the unemployment rate, albeit these estimates are not statistically significant. However, the first-order interaction term PRIV*MENA displays a negative and significant coefficient which means that the higher the proceeds from privatization the lower the unemployment rate in the MENA region. The remaining regional estimates show that, on average, privatization has no significant impact on unemployment whether we use the contemporary or the lagged PRIV variable.

The next step in the analysis is to look at the impact of the privatization method on unemployment. As previously mentioned, two measures are used, namely SIP (the proceeds from stock exchange issuances over total privatization proceeds) and PO (number of privatizations using stock exchange over the total number of privatizations). The results regarding the potential effects of SIP on unemployment are very interesting (see Table 21). As it stands out from column (1), the coefficient associated to the SIP variable is negative and statistically significant whereas the coefficient on the lagged SIP is statistically significant and positive. These findings are very appealing. They show that effects of privatization through stock exchange issuances are far from being uniform over time. More specifically, they tend to indicate that privatization by selling firms through stock exchange improves the unemployment rate in the year of issuance but increases it the year after. The same can be said about contemporaneous and lagged regional effects of privatization. Columns (3) and (4) of Table 21 depict the estimates of the contemporaneous and lagged first-order interactions terms between SIP and the different regional dummy variables. The regional effect regarding Africa is certainly the most significant, albeit bearing different signs, positive when the contemporaneous effect is considered (Column (3)) and negative when it comes to the lagged one (Column (4)). These results are somewhat contrasted. The variables SIP*AFRICA, SIP*EUROPE(-1) and SIP*LATINAMERICA(-1) are positive and statistically significant.

However, the SIP*AFRICA(-1) variable is negative and significant. Hence, the previous explanations pertain equally to the case of Africa, namely, the use of stock exchange to privatize firms contributes to increase unemployment in the beginning but turns to be favourable in matter of job creation the year after. Besides, Column (4) shows that the regional lagged effects of privatization are significant in the case of both Europe and Latin America. In Europe and Latin America, it seems that the impact of privatization on unemployment is delayed somewhat to the next year with a deteriorating effect. Coefficients associated to these variables are statistically significant, but bear positive signs. More interestingly, privatization through stock exchange does not seem to have any significant effect on unemployment in the MENA region.

The inspection of the results in Table 19 permits to conclude that the direct effect of the proportion of privatizations done through stock exchange (PO variable) is rather negative but statistically non significant. On the other hand, the coefficient on the lagged effect of PO is positive and significant indicating the higher the proportion of privatizations done through stock exchange the higher will be the increase of unemployment in the subsequent year. A close inspection of the distributional effects through regions indicates that, in Africa, privatization through stock exchange improve unemployment the same year but reduce it in the subsequent year. However, in Europe, the immediate impact of privatization through stock exchange seems to be absent but in the year after the effect is towards an increase of the unemployment rate.

In summary, the impact of privatization on unemployment rate depends on the measure used and the region to which the privatization belongs. Two main results emerge from our analysis: (1) privatization proceeds lower the unemployment rate in the subsequent year, and (2) on average proceeds from using stock exchange in privatization operations impact negatively on the labour market by increasing unemployment rates in the next year.

The proceeds from privatization measure (PRIV) is the only privatization variable that has a positive and significant coefficient. So, the higher the privatization proceeds in a country, the more privatization is detrimental to inequality. The findings by region show very contrasting but interesting results. In Africa and Latin America, privatization process increases inequality since the coefficients on all the privatization measures are positive and significant at the exception of PO variable for Africa. In Asia and Europe, the impact is on the

opposite direction since the coefficients associated to TNP and SIP variables are negative and significant. Overall, the results in this section confirm that the impact of privatization on inequality is mixed. Higher proceeds from privatization are detrimental to inequality only in Africa and Latin America. In Europe and Asia, privatization seems to reduce significantly inequality.

Table 18- GMM-in system estimates of the impacts of TNP on UNEMP; Two-step results

Variables	Rate of unemployment (UNEMP)			
UNEMP(-1)	0.490***	0.576***	0.610***	0.546***
	(0.083)	(0.075)	(0.047)	(0.098)
TNP	0.137			
	(0.006)			
TNP(-1)		-0.004**		
		(0.005)		
TNP*AFRICA			0.045	
			(0.030)	
TNP*ASIA			0.004	
			(0.018)	
TNP*EUROPE			0.019*	
			(0.012)	
TNP*LATINAMERICA			0.004	
			(0.046)	
TNP*MENA			-0.058	
			(0.064)	
TNP*AFRICA(-1)				-0.019
				(0.022)
TNP*ASIA(-1)				-0.000
				(0.010)
TNP*EUROPE(-1)				0.001
				(0.015)
TNP*LATINAMERICA(-1)				-0.029
				(0.053)
TNP*MENA(-1)				-0.014
				(1.020)
Income (RGDPG)	6.762	8.316*	3.693	8.710
	(5.195)	(4.627)	(4.031)	(8.015)
Macroeconomic stability (INFLATION)	-0.304	0.776	1.242	2.061
	(2.099)	(1.638)	(1.919)	(1.785)
Financial intermediary (CREDIT)	4.000	1.536	-0.038	2.208
	(2.578)	(1.736)	(1.151)	(2.805)
Savings (SAVINGS)	10.388	3.485		
	(14.468)	(11.744)		
Investment (INVEST)	-33.657	-15.190		
	(24.531)	(19.996)		
External shocks (OPENN)	-0.416	-0.087	-2.776	-2.992
	(1.455)	(1.486)	(1.752)	(2.107)
Financial liberalization (LIB)	1.285***	1.511***	1.476***	1.865***
	(0.315)	(0.420)	(0.435)	(0.653)
Public debt (DEBT)	2.416*	3.319**	4.101*	5.179***
	(1.528)	(1.528)	(2.383)	(1.936)
Legal origin (LO)	-0.189	-0.023	0.381	-1.110
	(1.101)	(0.806)	(0.881)	(1.228)
Corruption (CORRUPTION)	0.007	0.108	0.288	-0.822
	(1.067)	(0.886)	(0.883)	(1.286)
Institutional quality (IQ)	0.073	-0.128	-0.490	0.686
	(0.827)	(0.668)	(0.743)	(1.009)
Constant	-0.142*	-0.080	0.014	-0.063
	(0.077)	(0.070)	(0.103)	(0.060)
Sargan test	11.47***	12.11***	9.27***	11.36***
Serial correlation test	-1.26***	-0.79***	-0.32**	-0.16**
Nb. of countries	38	38	38	38
Nb. of observations	266	266	266	266

This table presents the results of two-step system GMM estimation for the available sample of 38 countries over the 1988-2008 periods. The dependent variable is the rate of unemployment (UNEMP) expressed in percentage point. Privatization is proxied by the total number of privatization (TNP). Privatization variables crossed with regional

dummies provide differentiated effect relating to the five regions, namely Africa, Asia, Europe Latin America and MENA. *Variable(-1)* means that the considered variable enters the model in a first lagged form. The nature of GMM method leads to introduction of lagged dependent variable (UNEMP(-1)). For Sargan test, the null hypothesis indicates that the used instruments are not correlated with the residuals. For the test of serial correlation, the null hypothesis indicates that the errors in the first-difference regression exhibit no second-order serial correlation. Standard errors of estimates are reported in parentheses.

***, **, and * indicate significance levels at 1, 5, and 10 percent, respectively.

Table 19- GMM-in system estimates of the impacts of PO on UNEMP; Two-step results

Variables	Rate of unemployment (UNEMP)			
UNEMP(-1)	0.557 ***	0.539***	0.609***	0.765***
	(0.067)	(0.092)	(0.107)	(0.138)
PO	-0.358			
	(0.345)			
PO(-1)		0.288**		
		(0.124)		
PO*AFRICA			-9.287***	
			(3.381)	
PO*ASIA			-0.755	
			(0.558)	
PO*EUROPE			-0.122	
			(0.126)	
PO*LATINAMERICA			0.337	
			(1.001)	
PO*MENA			-2.865	
			(2.868)	
PO*AFRICA(-1)				16.602***
				(5.980)
PO*ASIA(-1)				0.397
				(0.277)
PO*EUROPE(-1)				0.247*
				(0.109)
PO*LATINAMERICA(-1)				0.447
				(1.250)
PO*MENA(-1)				0.799
				(2.768)
Income (RGDPG)	5.453	2.688	1.290	2.701
	(3.964)	(3.363)	(4.596)	(3.901)
Macroeconomic stability (INFLATION)	-0.360	0.375	1.413	-1.380
	(1.686)	(0.849)	(1.224)	(2.012)
Financial intermediary (CREDIT)	1.928	3.538	3.276	4.248
	(1.904)	(2.714)	(4.141)	(3.433)
Savings (SAVINGS)	12.106	8.089		7.866
	(13.328)	(7.494)		(17.530)
Investment (INVEST)	-28.320	-9.708		-24.232
	(22.435)	(8.913)		(30.701)
External shocks (OPENN)	0.221	-2.658**	-5.650	-1.108***
	(1.308)	(1.167)	(2.265)	(3.203)
Financial liberalization (LIB)	1.226	1.607***	0.569	1.433
	(0.896)	(0.342)	(0.611)	(0.565)
Public debt (DEBT)	2.063	5.319	4.318	3.012
	(1.726)	(1.853)	(1.750)	(3.157)
Legal origin (LO)	0.449	-0.304	-1.083	-0.599
	(0.836)	(0.610)	(0.968)	(0.839)
Corruption (CORRUPTION)	0.780	-0.508	-0.887	-0.164
	(0.951)	(0.722)	(1.157)	(0.889)
Institutional quality (IQ)	-0.513	0.231	0.691	0.210
	(0.689)	(0.605)	(0.922)	(0.712)
Constant	-0.084	-0.017	-0.039	-0.045
	(0.059)	(0.071)	(0.122)	(0.104)
Sargan test	12.84***	9.51***	10.64***	6.95***
Serial correlation test	-1.14**	-0.94**	-0.91	-1.11**
Nb. of countries	38	38	38	38
Nb. of observations	266	266	266	266

This table presents the results of two-step system GMM estimation for the available sample of 38 countries over the 1988-2008 periods. The dependent variable is the rate of unemployment (UNEMP) expressed in percentage point. Privatization is proxied by the total proportion of privatization through SIPs over the total number of privatizations

(PO). Privatization variables crossed with regional dummies provide differentiated effect relating to the five regions, namely Africa, Asia, Europe Latin America and MENA. *Variable(-1)* means that the considered variable enters the model in a first lagged form. The nature of GMM method leads to introduction of lagged dependent variable (UNEMP(-1)). For Sargan test, the null hypothesis indicates that the used instruments are not correlated with the residuals. For the test of serial correlation, the null hypothesis indicates that the errors in the first-difference regression exhibit no second-order serial correlation.

Standard errors of estimates are reported in parentheses.

***, **, and * indicate significance levels at 1, 5, and 10 percent, respectively.

Table 20- GMM-in system estimates of the impacts of PRIV on UNEMP; Two-step results

Variables	Rate of unemployment (UNEMP)			
UNEMP(-1)	0.609***	0.583***	0.587***	0.625***
	(0.052)	(0.111)	(0.057)	(0.160)
PRIV	-6.466			
	(6.057)			
PRIV(-1)		-2.269		
		(4.572)		
PRIV*AFRICA			-46.692***	
			(11.515)	
PRIV*ASIA			1.179	
			(30.137)	
PRIV*EUROPE			9.305	
			(34.203)	
PRIV*LATINAMERICA			0.122	
			(13.397)	
PRIV*MENA			-9.748	
			(10.589)	
PRIV*AFRICA(-1)				-31.312
				(68.426)
PRIV*ASIA(-1)				-1.181
				(91.142)
PRIV*EUROPE(-1)				23.598
				(65.651)
PRIV*LATINAMERICA(-1)				35.625
				(45.805)
PRIV*MENA(-1)				17.950
				(16.107)
Income (RGDPG)	8.594	5.859	4.380	2.90
	(6.201)	(4.791)	(4.200)	(5.415)
Macroeconomic stability (INFLATION)	-0.555	-0.754	-0.150	-0.500
	(1.611)	(1.85)	(1.867)	(3.570)
Financial intermediary (CREDIT)	2.478	1.994	1.192	-0.327
	(2,342)	(2.255)	(1.646)	(5.465)
Savings (SAVINGS)	7.023	-18.779		-0.750
	(8.373)	(21.651)		(27.392)
Investment (INVEST)	-21.555*	-18.779		-6.723**
	(12.652)	(21.651)		(37.203)
External shocks (OPENN)	0.955	0.914	-1.647	-1.734
	(1.786)	(2.106)	(1.741)	(2.318)
Financial liberalization (LIB)	1.302**	1.472***	1.340*	0.941
	(0.582)	(0.409)	(0.809)	(0.829)
Public debt (DEBT)	2.044	3.435	5.447**	3.735
	(2.119)	(3.564)	(2.928)	(4.663)
Legal origin (LO)	0.040	0.614	-0.593	0.569
	(0.857)	(0.598)	(1.026)	(1.251)
Corruption (CORRUPTION)	0.155	0.264	-0.345	0.486
	(1.116)	(0.883)	(1.315)	(0.993)
Institutional quality (IQ)	-0.162	-0.434	0.188	-0.635
	(0.873)	(0.642)	(0.982)	(0.831)
Constant	-0.121	-0.070	0.001	0.006
	(0.082)	(0.075)	(0.066)	(0.159)
Sargan test	11.59***	11.85***	11.55***	8.06***
Serial correlation test	-1.44***	-1.14***	-0.34**	-0.72**
Nb. of countries	38	38	38	38
Nb. of observations	266	266	266	266

This table presents the results of two-step system GMM estimation for the available sample of 38 countries over the 1988-2008 periods. The dependent variable is the rate of unemployment (UNEMP) expressed in percentage point. The nature of GMM method leads to introduction of lagged dependent variable (UNEMP(-1)). Privatization is

proxied by the ratio of total proceeds from privatizations over GDP (PRIV). Privatization variables crossed with regional dummies provide differentiated effect relating to the five regions, namely Africa, Asia, Europe Latin America and MENA. *Variable(-1)* means that the considered variable enters the model in a first lagged form. For Sargan test, the null hypothesis indicates that the used instruments are not correlated with the residuals. For the test of serial correlation, the null hypothesis indicates that the errors in the first-difference regression exhibit no second-order serial correlation.

Standard errors of estimates are reported in parentheses.

***, **, and * indicate significance levels at 1, 5, and 10 percent, respectively.

Table 21- GMM-in system estimates of the impacts of SIP on UNEMP; Two-step results

Variables	Rate of unemployment (UNEMP)			
UNEMP(-1)	0.604***	0.555***	0.698***	0.887***
	(0.065)	(0.085)	(0.089)	(0.146)
SIP	-0.250***			
	(0.076)			
SIP(-1)		0.227***		
		(0.055)		
SIP*AFRICA			3.135**	
			(1.537)	
SIP*ASIA			-0.423	
			(0.480)	
SIP*EUROPE			-0.039	
			(0.085)	
SIP*LATINAMERICA			0.747	
			(0.753)	
SIP*MENA			0.274	
			(1.608)	
SIP*AFRICA(-1)				-7.458***
				(3.565)
SIP*ASIA(-1)				0.079
				(0.107)
SIP*EUROPE(-1)				0.271***
				(0.070)
SIP*LATINAMERICA(-1)				1.947*
				(1.210)
SIP*MENA(-1)				-0.105
				(3.133)
Income (RGDPG)	4.830	5.381	4.592	4.771
	(5.222)	(3.458)	(4.222)	(3.515)
Macroeconomic stability (INFLATION)	0.496	0.331	1.041	-1.132
	(1.548)	(0.887)	(1.060)	(1.583)
Financial intermediary (CREDIT)	2.370	3.268	-0.258	2.326
	(2.790)	(2.991)	(4.054)	(5.546)
Savings (SAVINGS)	2.403	1.054		-13.301*
	(15.754)	(5.821)		(8.004)
Investment (INVEST)	-1.962	-8.184		-4.753
	(23.437)	(10.823)		(12.945)
External shocks (OPENN)	-0.130	0.118	-4.003**	-0.522
	(1.999)	(1.280)	(2.048)	(1.937)
Financial liberalization (LIB)	0.831	1.417***	1.471***	1.431**
	(0.822)	(0.521)	(0.496)	(0.744)
Public debt (DEBT)	3.702***	4.167***	5.423***	-1.177
	(1.728)	(1.69)	(1.809)	(3.077)
Legal origin (LO)	-0.366	-0.498	-0.910	-0.085
	(0.824)	(0.662)	(0.980)	(1.317)
Corruption (CORRUPTION)	-0.341	-0.713	-0.424	0.775
	(1.057)	(0.714)	(1.123)	(1.683)
Institutional quality (IQ)	0.210	0.464	0.549	-0.546
	(0.801)	(0.606)	(0.880)	(1.298)
Constant	-0.106	-0.096	0.884	-0.048
	(0.077)	(0.077)	(0.103)	(0.116)
Sargan test	13.26	13.04***	11.08	7.16***
Serial correlation test	-1.17	-1.15***	-0.92	-1.77**
Nb. of countries	38	38	38	38
Nb. of observations	266	266	266	266

This table presents the results of two-step system GMM estimation for the available sample of 38 countries over the 1988-2008 periods. The dependent variable is the rate of unemployment (UNEMP) expressed in percentage point. Privatization is the ratio of proceeds from SIPs privatizations over the total proceeds from privatizations (SIP).

Privatization variables crossed with regional dummies provide differentiated effect relating to the five regions, namely Africa, Asia, Europe Latin America and MENA. *Variable(-1)* means that the considered variable enters the model in a first lagged form. The nature of GMM method leads to introduction of lagged dependent variable (UNEMP(-1)). For Sargan test, the null hypothesis indicates that the used instruments are not correlated with the residuals. For the test of serial correlation, the null hypothesis indicates that the errors in the first-difference regression exhibit no second-order serial correlation.

Standard errors of estimates are reported in parentheses.

***, **, and * indicate significance levels at 1, 5, and 10 percent, respectively.

The empirical results of privatization on inequality are reported in Tables 22 and 23 below. Table 22 deals with the impacts of privatization effort (TNP and PRIV variables) on the inequality variable GINI. Columns (1) and (2) of Table 22 report the estimation results when PRIV is included in the regressions whereas Columns (3) and (4) focus on the results obtained when TNP is included. Likewise, Columns (1) and (2) of Table 23 depict the estimation results obtained when the method of privatization variable PO is included in the regressions whereas Columns (3) and (4) report the results obtained when the SIP variable is included in the regressions.

It is worth noting that dynamic panel estimation would be an ideal procedure to adopt given the choice of instrumental variables. However, missing observations and the fact that Arellano-Bond method involves differencing the variables and using lags instruments, would leave us with too few observations. Worse still, the values of Gini coefficient (the dependent variable) for most countries in the sample vary little over years, and even take the same numerical values for some countries over more than two or three years. Thus, when being differentiated it will behaviour like a dummy variable leading thereby to a fragile inference. In short, contrary to the previous estimates given in Tables 18-21, and for these reasons we preferred not to have recourse to the GMM method. As indicated in Table 22 and 23, the Hausman test suggests that of the random effects specification is appropriate, and the preliminary estimates led to retain the random effects GLS estimates.

The impact of privatization on inequality depends on the type of privatization measure used, on the region and on the time effect. The proceeds from privatization (PRIV) is the only privatization variable that has a positive and significant coefficient. So, the higher the privatization proceeds in a country, the more privatisation is detrimental to inequality.

The findings by region show very contrasting but interesting results. In Africa and Latin America, privatization increases inequality since the coefficients on all the privatization measures are positive and significant at the exception of PO for Africa. In Asia and Europe, the impact is on the opposite direction since the coefficients on TNP and SIP are negative and significant.

The estimates for the control variables presented in Tables 22 and 23 show that a higher level of financial sector development, savings, investment and country's indebtedness reduce

the level of inequality. Moreover, trade openness increases inequality whereas financial openness decreases it. Finally, the results on institutional variables indicate that better institutional quality (IQ) reduce inequality despite that a higher level of corruption contributes to increase it.

Overall, the results in this section confirm that the impact of privatization on inequality is mixed. Higher proceeds from privatization are detrimental to inequality only in Africa and Latin America. In Europe and Asia, privatization seems to reduce significantly inequality.

Table 22- Random effects GLS estimates

Variables	Inequality (Gini coefficient)			
PRIV	0.444**			
	(0.194)			
TNP			-0.0002	
			(0.0003)	
PRIV*AFRICA		1.945***		
		(0.597)		
PRIV*ASIA		-0.606		
		(0.737)		
PRIV*EUROPE		-1.133		
		(0.999)		
PRIV*LATINAMERICA		0.448**		
		(0.232)		
PRIV*MENA		-0.589		
		(0.534)		
TNP*AFRICA				0.005***
				(0.002)
TNP*ASIA				-0.002***
				(0.001)
TNP*EUROPE				-0.0005*
				(0.0003)
TNP*LATINE				0.002***
				(0.001)
TNP*MENA				0.000
				(0.001)
Income (RGDPG)	0.056	0.082	0.091	-0.056
	(0.099)	(0.102)	(0.094)	(0.099)
Macroeconomic stability (INFLATION)	0.020*	0.020*	0.018*	0.0124
	(0.012)	(0.011)	(0.011)	(0.009)
Financial intermediary (CREDIT)	-0.108***	-0.116***	-0.118***	-0.117***
	(0.014)	(0.015)	(0.013)	(0.014)
Savings (SAVINGS)	-0.167***	-0.184***	-0.152***	-0.193***
	(0.064)	(0.064)	(0.058)	(0.057)
Investment (INVEST)	-0.506***	-0.474***	-0.514***	-0.413***
	(0.074)	(0.082)	(0.073)	(0.080)
External shocks (OPENN)	0.123***	0.116***	0.123***	0.103***
	(0.007)	(0.012)	(0.012)	(0.011)
Financial liberalization (LIB)	-0.030***	-0.025***	-0.032***	-0.032***
	(0.007)	(0.007)	(0.007)	(0.007)
Public debt (DEBT)	-0.145***	-0.146***	-0.137***	-0.148***
	(0.009)	(0.013)	(0.010)	(0.010)
Legal origin (LO)	0.037***	0.042***	0.036***	0.032***
	(0.005)	(0.005)	(0.073)	(0.007)
Corruption (CORRUPTION)	0.046***	0.047***	0.048***	0.037***
	(0.006)	(0.007)	(0.007)	(0.007)
Institutional quality (IQ)	-0.027***	-0.028***	-0.027***	-0.024***
	(0.003)	(0.004)	(0.003)	(0.004)
Constant	0.593***	0.585***	0.589***	0.598***
	(0.017)	(0.018)	(0.017)	(0.018)
Hausman test	10,01	14.99	11,89	13.56
FF test (joint significance)	3.52***	3.87***	2.99***	3.03***
Number of countries	32	32	32	32
Number of observations	224	224	224	224

This table presents random effects estimation for the full sample of the 32 emerging markets over the 1987-2000 periods (Four countries have been dropped from the sample). Privatization is proxied by either the total number of privatization (TNP) or the ratio of total proceeds from privatizations over GDP (PRIV). Privatization variables crossed with regional dummies provide differentiated effect relating to the five regions, namely Africa, Asia, Europe Latin America and MENA.

Hausman test permits the choice in favour of fixed effects specifications. Failing to reject the null hypothesis indicates that the random effects model is appropriate.

Standard errors are reported in parentheses.

***, **, * indicate significance levels at 1%, 5%, and 10%, respectively.

Table 23- Random effects GLS estimates

Variables	Inequality (Gini coefficient)			
PO	0.444			
	(0.194)			
SIP			-0.001	
			(0.006)	
PO*AFRICA		0.056		
		(0.041)		
PO*ASIA		-0.018		
		(0.014)		
PO*EUROPE		-0.021		
		(0.025)		
PO*LATINE		0.036*		
		(0.020)		
PO*MENA		-0.005		
		(0.016)		
SIP*AFRICA				0.046***
				(0.042)
SIP*ASIA				-0.014***
				(0.0.014)
SIP*EUROPE				-0.014*
				(0.013)
SIP*LATINE				0.053***
				(0.033)
SIP*MENA				-0.009
				(0.013)
Income (RGDPG)	0.059	0.049	0.094	0.032
	(0.099)	(0.093)	(0.092)	(0.097)
Macroeconomic stability (INFLATION)	0.020*	0.015	0.021*	0.0122
	(0.011)	(0.012)	(0.011)	(0.014)
Financial intermediary (CREDIT)	-0.108***	-0.128***	-0.114***	-0.123***
	(0.013)	(0.014)	(0.013)	(0.015)
Savings (SAVINGS)	-0.167***	-0.154***	-0.163***	-0.155***
	(0.064)	(0.054)	(0.057)	(0.059)
Investment (INVEST)	-0.506***	-0.449***	-0.498***	-0.459***
	(0.074)	(0.077)	(0.072)	(0.080)
External shocks (OPENN)	0.123***	0.116***	0.123***	0.113***
	(0.007)	(0.011)	(0.011)	(0.012)
Financial liberalization (LIB)	-0.030***	-0.034***	-0.031***	-0.032 ***
	(0.007)	(0.008)	(0.007)	(0.010)
Public debt (DEBT)	-0.145***	-0.138***	-0.139***	-0.134***
	(0.009)	(0.009)	(0.009)	(0.010)
Legal origin (LO)	0.037***	0.041***	0.036***	0.040***
	(0.005)	(0.005)	(0.004)	(0.005)
Corruption (CORRUPTION)	0.046***	0.052***	0.049***	0.050***
	(0.006)	(0.007)	(0.006)	(0.008)
Institutional quality (IQ)	-0.027***	-0.029***	-0.027***	-0.028***
	(0.003)	(0.004)	(0.003)	(0.004)
Constant	0.593***	0.574***	0.589***	0.578***
	(0.010)	(0.018)	(0.0164)	(0.019)
Hausman test	9.05	7.17	9.28	6.97
FF test (joint significance)	3.49***	3.07**	4.61***	3.01***
Number of countries	32	32	32	32
Number of observations	224	224	224	224

This table presents random effects estimation for the full sample of the 32 emerging markets over the 1987-2000 periods (Four countries have been dropped from the sample). Privatization is proxied by either the total proportion of privatization through SIPs over the total number of privatizations (PO) or the ratio of proceeds from SIPs privatizations over the total proceeds from privatizations (SIP). Privatization variables crossed with regional

dummies provide differentiated effect relating to the five regions, namely Africa, Asia, Europe Latin America and MENA..

Hausman test permits the choice in favour of fixed effects specifications. Failing to reject the null hypothesis indicates that the random effects model is appropriate.

Standard errors are reported in parentheses.

***, **, * indicate significance levels at 1%, 5%, and 10%, respectively.

5. The policy implications of the main findings across the different samples

According to the main results provided by the empirical study, several issues could be advanced as policy implications. Regarding the impact of privatization on the stock market development, our empirical results could be explained by going back to the way privatization is actually implemented across countries. For instance, only recently, have MENA and African countries started to privatize on a large scale. Also, most past transactions were direct sales to core investors, so a limited number of privatized firms were actually listed on the stock markets. In contrast, in Asian countries, privatization has started since the 1980s, relatively earlier than in any other region in the sample. Thus, the privatization effects on stock markets have had the time to materialize.

Overall, our results show a positive impact of privatization progress on stock market development because it signals the government commitment towards market oriented policies, and less policy risk. However, we do not find a common systematic effect in all regions suggesting that the way the privatization's signal is perceived depends on the geographical region. For instance, it has been perceived as a positive signal in Asia which led to an improvement in market size and liquidity. The reform progress has had no impact on the MENA markets. Nor is there an observable effect for Africa and Latin America, regardless of the measure of stock market development.

Turning to the second kind of indicators of privatization which reflect the method of privatization by public share offering, it is shown to be, in general, insignificantly related to stock market development everywhere except for the Asian bloc. These results can be rationalized as follows: Asian countries have privatized extensively, and heavily relied on public offerings at the time of privatization. Latin America, in contrast, used more often private sales to private investors or a combination of private and public sales for the same firm. In Africa, governments started making efforts to privatize, and put in place some privatization offerings, but the markets were unable to absorb them due to the lack of savings in the hands of investors, and the low initial market liquidity, which did not help to build investors confidence in these markets. The MENA region, in contrast, has been relying on a

combination of privatization offerings and private sales, leading to the listing of several large companies in diverse sectors (finance, airlines, etc.).

Our preliminary evidence leads us to the following discussion of policy implications. Compared to developed countries, the retention of control of SOEs by the government is still very prevalent. In the MENA region for instance, Nellis (2005) provides some meaningful examples. For instance, 65% of the total value added in Algeria is produced by SOEs. In Algeria, Syria and Iran, up to 80% of the industrial sector is owned by the government. Overall, the share of public firms in GDP is the highest in the MENA region. Hence, there is still a lot to be done.

The progress in privatization was a clear signal of government commitment towards market oriented policies, but was not perceived as such every where. Thus investors are still reluctant to heavily invest in the stock market. Admittedly, if most privatization transactions are implemented outside the stock market, there can be no positive externalities for the stock market. In addition, building investors' confidence must involve a sound institutional environment, where they have no fear of expropriation. If the sequence of reforms is not optimal, and governments implement privatization, deregulation, and liberalization, all simultaneously, the expected positive outcomes can be delayed. On the other hand, one cannot implement successful privatization offerings if the stock market is underdeveloped, and institutionally unsound. We just have to compare the privatization experience of Asian markets to that from the other regions that we examined. Asian governments put in place liberalization reforms, and then embarked on transition of their institutional environment, and regulation of stock markets. When the conditions necessary to launch privatization were in place, they started selling public assets. The economic, institutional and social conditions helped to make their privatization a success story. In Latin America, several countries, such as Chile, embarked on intensive privatization programs in the early 1980s, but the experience was not viable because no changes were introduced in regulation, competitiveness laws, investor protection, and market transparency. As a consequence, the newly privatized firms, had to be re-nationalized, and once the institutional environment became more adequate, the country undertook its privatization program for the second time.

Privatization is a redistributive policy and as such must assure that investors are treated fairly and that transactions are dealt with in all transparency. This requires a sound institutional environment as a pre-condition for success.

As for the social dimension of privatization, the empirical results indicate that the impact of privatization on unemployment depends on the privatization measure used, and is perceived differentially across the considered geographical regions. More specifically, we observe that increasing proceeds from privatization reduce unemployment. On another front, the number of privatizations is found to have a delayed effect on employment; the unemployment rate is found to decrease subsequent to a significant increase in the number of privatizations in almost all the regions but Europe.

The method of privatization seems to be a significant determinant of employment dynamics. Besides, using stock exchange as a privatization device is counterproductive in terms of employment as well as liberalizing the financial sector. If governments are willing to reduce unemployment, then privatization through stock exchange should be avoided. Indeed, despite that it reduces unemployment the year of issuance, privatization through stock exchange tends to increase the unemployment the years after. This finding is particularly true for African countries. Such finding has been again highlighted by other studies. For instance, it has been argued once privatized, the requirements of efficiency and competition frequently force the new owners to lay off more workers. The overstaffing, which is relatively common in developed countries where most firms are working in non-technical areas, could explain why unemployment increases the year after the issuance. For instance, it has been shown that on average SOEs in the early 1990s were overstaffed by nearly 35% in India and Turkey, 40-50% in Sri Lanka, 20-25% in Ghana and Uganda, 80% in Egypt's steel sector, and around 47% in Brazil's national railway (Belser and Rama, 2001).

In order to alleviate the negative impacts of privatization on employment, governments that embark on privatization should have recourse to accompanying policy measures such as making special provisions in privatization plans to compensate laid-off workers. These special provisions should be used without generating excessive political pressure and increasing fiscal dominance. Other accompanying measures that should be pursued by governments would consist in stressing incentives and encouraging voluntary participation instead of job cuts. Besides, governments may create a kind of special funds to cover costs related to early

retirement or transfer costs of employees in redundant positions. But, most importantly, these funds should be used in order to cover costs related to business training for the many laid-off employees that would prefer to start their own business in the private sector. In brief, such accompanying policy measures would minimize the laid-off workers brought about by privatization.

On the inequality side, privatization proceeds decrease inequality only in environment where institutions are well developed and level of inequality is relatively low as Europe or Asia. Managing privatization proceeds in an efficient and effective way is a necessary, albeit not sufficient, condition to limit negative effects of privatization on public finance, and in turn on growth and income inequality. Much efforts should be done in order to reduce inequality because high inequality is synonym of high rate of poverty, and this latter cannot be reduced significantly even at high growth rates. In order for growth to reduce poverty, inequality should also be reduced as much as possible. For instance, and as stressed above, a portion of privatization receipts (or funds) might be spent on pro-poor plans, which will help reducing inequality. Better still, to further reducing inequality financial sector should be developed, saving and investment should be increased, trade openness should be reinforced. Again, the empirical evidence presented in this project indicates clearly that on the one hand institutional quality reduces significantly inequality, but on the other hand high level of corruption increases it. Therefore, in order to get the most out of privatization and in order to reduce further inequality, policymakers should adopt a corporate governance perspective that permits to have more effective privatizations with fewer problems, particularly in the long-term. More specifically, policymakers should do their best to improve institutional quality and eradicate corruption.

6. Concluding remarks

Privatization is so far considered as one of the main core policies that came to re-enhance government efforts in upgrading the public sector. It has become recommended by international organizations (chiefly, the World Bank) as well as experts from developed countries. Despite the increasing empirical evidence of privatization's benefits, there has been an increasing dissatisfaction and opposition among citizens and policymakers to privatization policy. This dissatisfaction reflects the growing questioning about the benefits of

privatization, the overselling of privatization as a panacea for all economic problems, and the concern that privatization does not produce macroeconomic and distributional gains equivalent to its microeconomic benefits.

Far from recommending the abandon or/and reverse of privatization process, this project recommends that privatization process should be carried out circumspectly and correctly. More specifically, decisions to privatize should be assessed soundly, and its expected outcome and impacts on inequality and employment should be evaluated beforehand. For instance, privatization should be implemented while accounting for local conditions, taking advantage of the domestic comparative advantages, and elaborating mechanisms that ensure that the poor have access to affordable essential services. Better still, efforts to promote competition and regulatory frameworks should deepen, and transparency in sales processes has to be enforced. Policymakers should be borne in mind that what is considered to be a good macroeconomic policy will not systematically alleviate poverty and reduce income inequality.

Even if privatization enhances enterprise efficiency as it has been argued in many empirical studies, the bulk of its benefits tends to channel most notably to shareholders, managers, domestic or foreign investors and those connected to the political elite. However, the experience has shown that privatization costs are rather borne by many (i.e., taxpayers, consumers, and workers) which has reduced the overall welfare. Worse, the often perceived corruption as well as the lack of transparency in privatization transactions, in some countries, have reduced gains and increased governance problems. Thus, if privatization is applied without proper regard to a country's economic and social conditions, it will lead to more severe social conditions.

Most of the theoretical and the empirical literature on the impact of divestiture has focused on microeconomic evidence, a small number of studies look at privatization as a broad policy reform that may act as a shock on output levels. But, very few studies have sought to assess the social impact of privatization. Although many studies have reported that privatization record is in general positive, privatization process chiefly in developing countries has nonetheless often been perceived as undesirable and often gave rise to social trouble and unrest, which is primarily because privatization is seen as a redistributive policy that favors the richest especially when it comes to the privatization of utilities. Privatizing utility is criticized as it is perceived to favor the richest, the foreign and those more corrupt.

This criticism is nourished by the perception that workers and customers pay for this reform by losing their jobs and by facing increased prices. Privatization is thus seen as favoring and increasing poverty and inequality. These criticisms have been more acute in infrastructure and utilities' privatizations (water, electricity, education, health, etc.) in general. The negative perception of the reform is highest when it involves the sale of infrastructure and strategic firms, considered as social-service providers.

The main objectives of this project have been to shed light on these neglected issues, namely what is the impacts of privatization on employment and inequality while accounting for the regional characteristics of privatization. The empirical evidence put forward in this project indicates that effects of privatization on inequality are rather mixed and depends on both region and privatization measures. It has been found that privatization proceeds are harmful to inequality when it comes to African and Latin American countries. Their effects on European and Asian countries are rather beneficial. As for privatization effects on inequality when it comes to MENA countries, the evidence seems to be rather inconclusive. The employment has been also found to be affected by privatization. On average, privatization proceeds have been found to lower the unemployment rate subsequent to the year privatization takes place. More importantly, privatization proceeds from stock exchange seem to decrease employment and its effects is distributed over the few years following the year of privatization.

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